Third Quarter, 1984

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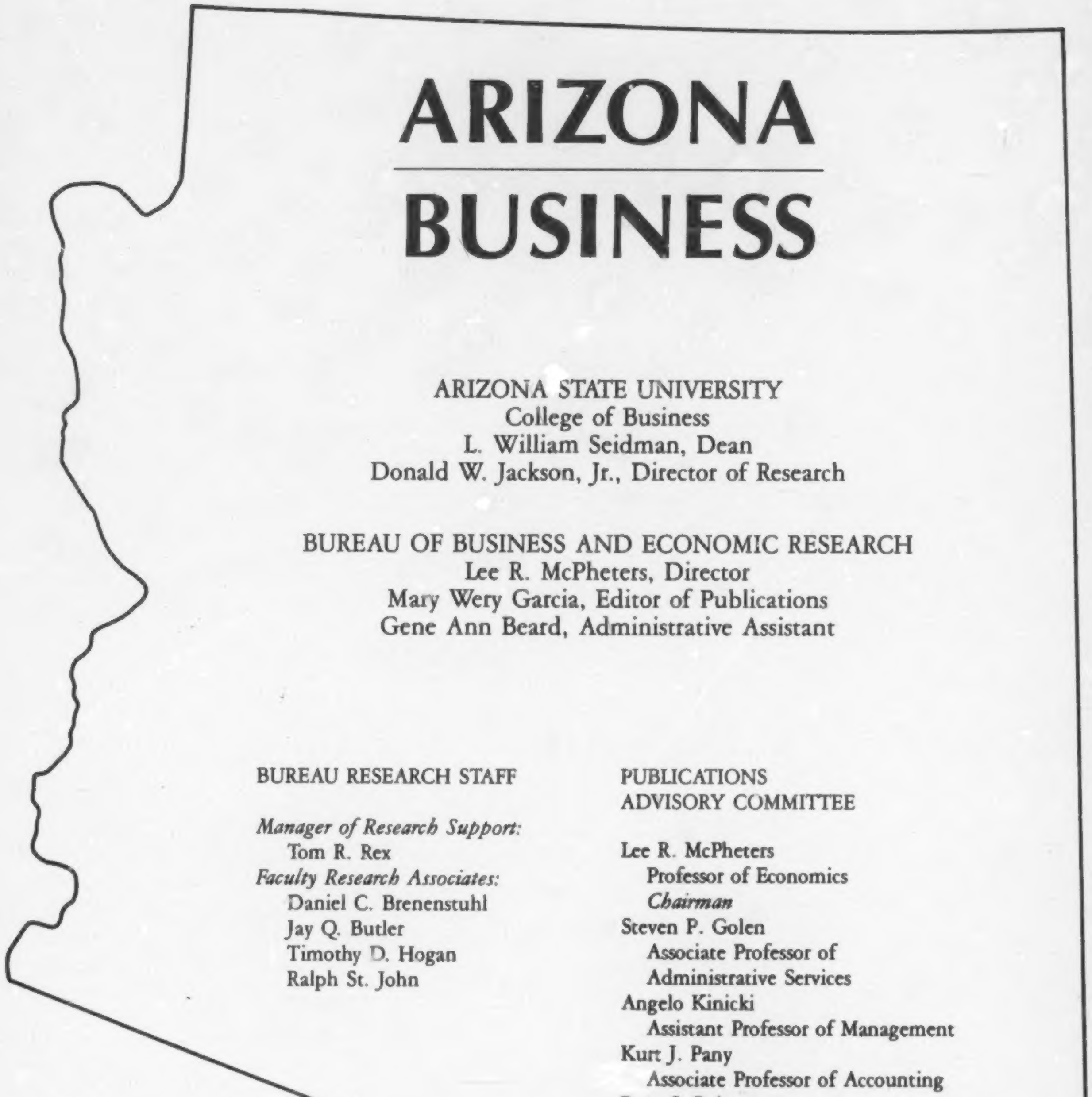

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Report to the Reader

This issue of *Arizona Business* offers a sampling of the special and continuing research projects engaged in by the Bureau of Business and Economic Research in the College of Business at ASU. We feature two special projects in major feature articles: "The 1983-84 Economic Impact of Arizona State University" and "Housing Appreciation in the Phoenix Metropolitan Area."

The former article reports on a study of how tax dollars that support the university flow back into the local community. It reveals that expenditures by ASU, its faculty, staff and students totalled $525.9 million during fiscal 1983-84. The second major feature analyzes Phoenix area housing appreciation, using a measure recently developed by the Bureau. During the 1981-83 period, the median rate of appreciation was slightly more than 3 percent per year.

Reports on the Bureau's ongoing research projects include a commentary by Jay Q. Butler, Director of the Arizona Real Estate Institute, on Arizona construction activity during the second quarter. Three tables provide building permit, new housing start, and real estate sales data. In addition, Tom R. Rex, Bureau Manager of Research Support, analyzes the demographics of metropolitan centers in the Southwest and reports on the first quarter data from the Bureau's new Arizona Gross State Product model. He also reviews second quarter consumer price index data for metropolitan Phoenix, which reveal a 5.6 percent increase in the prices of goods and services over second quarter, 1983.

We round out this issue of *Arizona Business* with Harold Fearon's "Survey of Arizona Business Conditions" and an article that examines the impact of the U.S. Export Trading Company Act of 1982 on U.S. exporting efforts.

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The 1983-84 Economic Impact of Arizona State University

TIMOTHY D. HOGAN
LEE R. McPHETERS

Arizona State University impacts the residents of Arizona in far-reaching and complex ways. The intangible impacts revolve around the university's essential missions of teaching, research, and service. Though not easily measured in the short run, they improve the quality of life for individuals and strengthen society's commerce and culture.

The tangible impacts of the university are more easily quantified: the number of students enrolled, number of degrees awarded, the size of the university's budget, and the economic activity its presence creates. This article reports on a recent study of the economic impact of expenditures by Arizona State University and its faculty, staff and students. The objective is to provide information for citizens who support the university by tracing the flow of their tax dollars back into the community.

The direct economic impact of Arizona State University for fiscal 1983-84 was an estimated $525.9 million. This article provides a breakdown of expenditures by ASU, its faculty, staff and students and quantifies the university's employment impact.

Timothy D. Hogan and Lee R. McPheters are Professors of Economics in the ASU College of Business. Dr. McPheters is also Director of the College's Bureau of Business and Economic Research. Dr. Hogan is a Faculty Research Associate in the Bureau. *The authors gratefully acknowledge the research contribution of Paul Umbriano, Graduate Research Assistant for the College of Business; the university offices that provided information for the study; and the funding assistance of the office of the ASU Vice President for Academic Affairs.*

RESEARCH DESIGN

The time period of the study is the university's fiscal year from July 1, 1983, through June 30, 1984. Data on faculty, staff and student expenditures were obtained during spring, 1984, by mailing questionnaires to 300 randomly selected faculty and staff and 4,000 students. Respondents provided expenditure information on housing costs, clothing outlays, grocery bills, transportation expenses, savings, charitable contributions, insurance, and other budget components.

These expenditure figures were combined with information obtained from ASU financial records on institutional spending for supplies, operations, services, and construction for the 1983-84 fiscal year. Institutional expenditures were restricted to those made to Arizona businesses.

Study methodology was developed by the American Council on Education and is described in the publication, *Estimating the Impact of a College or University on the Local Economy* (Washington, D.C.: American Council on Education, 1971). Thus, the results reported here are comparable both to those of similar studies undertaken at other major universities using the ACE method and to previous studies of the economic impact of ASU completed in 1971-72 and 1978-79.

INSTITUTIONAL EXPENDITURES

During fiscal 1983-84, institutional expenditures by ASU for operations, supplies and construction contributed $47.7 million to the local economy. This figure constitutes 9.1 percent of the university's total economic impact. As shown in Table 1, utilities accounted for the largest proportion of the operations budget (16.7 percent). Combined with telephone expenditures, $10.3 million was funneled back into the economy. Spending on office and operating supplies totalled $7.8 million (16.4 percent of the total).

TABLE 1
ASU INSTITUTIONAL EXPENDITURES FOR SUPPLIES, SERVICES, EQUIPMENT AND CONSTRUCTION
Fiscal 1983-84

Expenditure Category	*Expenditures (000)*	*Percent of Total*
Professional Services	$ 5,910	12.4%
Office Supplies and Postage	2,139	4.5
Operating Supplies	5,700	11.9
Maintenance and Repairs	5,344	11.2
Telephone	2,366	5.0
Utilities	7,941	16.7
Printing, Photography	2,594	5.4
Rental Fees	1,967	4.1
Insurance	942	2.0
Food	1,007	2.1
Land and Improvements	1,396	2.9
Construction	10,398	21.8
TOTAL	$ 47,704	100.0%

Note: Expenditures listed are restricted to those made to Arizona businesses. Excluded are items such as travel, library acquisitions and major equipment.

Source: Office of the Comptroller, Arizona State University.

Since its transition from Arizona State College in 1958, Arizona State University has experienced a steady enrollment growth that has generated a continuing need for expanded physical facilities. The university responded to this need with a carefully planned, long-range program for construction of new buildings and renovation of existing structures. During fiscal 1983-84, the university spent $10.4 million on construction, accounting for 21.8 percent of its in-state institutional expenditures. Maintenance and repairs on existing ASU buildings generated another $5.3 million for the local economy.

EXPENDITURES BY ASU FACULTY, STAFF AND STUDENTS

Direct expenditures by the university's faculty, staff, and students exceeded $478 million during fiscal 1983-84. Table 2 provides a 15-category expenditure breakdown.

Student expenditures accounted for a major portion (67.9 percent) of the total direct economic impact of the university (Figure I). The $357 million magnitude of their spending is explained by the group's large size (more than seven times larger than faculty and staff) as well as by the fact that many students simultaneously hold down part-time or full-time jobs or have an employed spouse who helps provide family income.

Spending by ASU faculty and staff made up an additional 23 percent of the university's 1983-84 impact on the local economy. Of the $121.2 million total, faculty contributed $54.1 million and staff provided $67.1 million (Table 2). Disposable income for faculty and staff is shown in Table 3. From their $117.9 million payroll, deductions of $49.9 million were subtracted, yielding $68.6 million of spendable income.

FIGURE I
DIRECT EXPENDITURES IN ARIZONA
Fiscal 1983-84

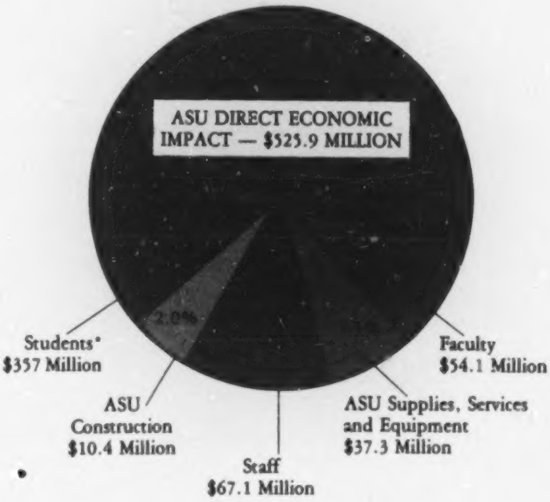

*Figure is for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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TABLE 2
DIRECT EXPENDITURES BY ASU FACULTY, STAFF AND STUDENTS
Fiscal 1983-84

Expenditure Category	*Faculty (000)*	*Percent*	*Staff (000)*	*Percent*	*Student* (000)*	*Percent*	*Total (000)*	*Percent*
Groceries	$ 6,968	10.8%	$ 9,273	14.4%	$ 48,275	74.8%	$ 64,516	100.0%
Clothing	2,144	10.5	2,581	12.6	15,717	76.9	20,442	100.0
Housing	12,405	12.2	16,709	16.5	72,225	71.3	101,338	100.0
Telephone	1,404	8.5	1,618	9.8	13,472	81.7	16,494	100.0
Utilities	3,369	9.0	5,030	13.4	29,189	77.7	37,589	100.0
Auto Payments	2,578	9.3	4,243	15.3	20,956	75.4	27,777	100.0
Auto Operations	2,884	7.9	4,330	11.9	29,189	80.2	36,404	100.0
Food Away from Home	3,037	11.2	3,018	11.2	20,956	77.6	27,012	100.0
Recreation	1,736	9.5	1,881	10.3	14,595	80.1	18,211	100.0
Insurance	3,165	9.6	3,849	11.7	25,821	78.6	32,835	100.0
Personal / Business Services	1,889	11.9	2,406	15.1	11,601	73.0	15,895	100.0
Medical Services	1,123	8.4	1,750	13.1	10,478	78.5	13,351	100.0
Other Retail Items	2,042	11.5	2,231	12.6	13,472	75.9	17,745	100.0
Savings	7,581	19.8	6,299	16.5	24,324	63.7	38,204	100.0
Charities	1,761	17.0	1,881	18.1	6,736	64.9	10,378	100.0
TOTAL	$54,085	11.3%	$67,097	14.0%	$357,008	74.7%	$478,191	100.0%

*Figures are for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

When student expenditures are combined with faculty and staff spending, the result is a weekly injection into the local economy of about $12 million during the academic year. The overall effect is a strong, continuing demand for the goods and services provided by Arizona business firms. The largest expenditure categories are housing, groceries, savings allocations, and vehicle operations, but expenditures on utilities, food away from home, insurance, and clothing are also sizable.

MONTHLY BUDGET PROFILES

The monthly expenditures reported by survey respondents are related in Table 4. Faculty spent the most on a monthly basis ($2,242), followed by staff ($1,623), then by students ($1,062). Figures 2, 3 and 4 illustrate the proportion of each group's total budget that was devoted to each of the 15 expenditure categories. Housing and housing-related expenses (rent, mortgage payments, telephone and utilities) constituted the largest budget item for all three groups.

On a proportional basis, faculty, staff and student expenditures were very similar for food (including groceries and food away from home), clothing, and personal expenses (including business and personal services, recreation and medical services). However, transportation expenditures (vehicle payments, repairs and fuel) were a larger share of the budget for students (22.9 percent) than for faculty (15 percent) or staff (17.6 percent). Faculty savings (13.2 percent) exceeded staff savings (8.9 percent) and was more than double the proportion of budget saved by students (6.0 percent).

Insight into the effects of price inflation during the latter part of the 1970s is provided by a comparison of budget figures from the 1983-84 impact study with those of the 1977-78 study. For the previous study, corresponding total monthly expenditures for faculty, staff and students were $1,387, $982, and $609 respectively. The 1983-84 budgets were 62 percent greater for faculty, 65 percent greater for staff, and 74 percent greater for students.

TABLE 3
DISPOSABLE INCOME OF ASU FACULTY AND STAFF
Fiscal 1983-84

1983-84 Faculty and Staff Payroll		$117,980,846
Less:	Federal Income Taxes Withheld	15,549,880
	State Income Taxes Withheld	3,376,272
	Social Security (employee contribution only)	13,251,299
	Arizona State Retirement System (employee contribution only)	6,975,406
	Health Insurance (employee contribution only)	6,340,801
	Life Insurance	163,387
	Auto Insurance	140,344
	Annuities	4,007,826
	Other Savings Plans	122,090
	United Fund	35,932
Total Deductions:		$ 49,963,237
Net:	Faculty and Staff Income from ASU, Available for Expenditures	$ 68,617,609

Source: Payroll Services, Personnel Office, Arizona State University.

TABLE 4
AVERAGE MONTHLY EXPENDITURES BY ASU FACULTY, STAFF AND STUDENT HOUSEHOLDS
Fiscal 1983-84

Expenditure Category	*Faculty*	*Staff*	*Students**
Groceries	$ 273	$ 212	$ 128
Clothing	84	59	42
Housing	486	382	197
Telephone	55	37	35
Utilities	132	115	75
Auto Payments**	224	186	166
Auto Operations	113	99	77
Food Away from Home	119	69	58
Recreation	68	43	39
Insurance	124	88	69
Personal/Business Services	74	55	31
Medical Services	44	40	28
Other Retail Items	80	51	36
Savings	297	144	64
Charities	69	43	17
TOTAL	$2,242	$1,623	$1,062

*Figures are for the nine-month 1983-84 academic year.

**Average payment for those reporting payments.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

For faculty, percentage increases in monthly expenditures between 1977-78 and 1983-84 were greatest for housing (59 percent), telephone (62 percent), food away from home (105 percent), personal and business services (100 percent), savings (87 percent), and charitable contributions (68 percent). For staff, the largest increases were seen in monthly spending for housing (80 percent), telephone (61 percent), auto operations (77 percent), personal and business services (103 percent), savings (80 percent), and charitable contributions (87 percent). Students experienced major expenditure increases for housing (53 percent), telephone (105 percent), and auto operations (64 percent).

The interpretation of students' monthly expenditures (Table 4) must be undertaken with care, recognizing the great diversity in spending patterns of this large group. Their expenditures for items such as groceries and housing may not be directly comparable to those by faculty and staff who are reporting data for a family unit. For example, many students who lived with parents or other relatives while attending the university reported very low or zero expenditures for certain items such as groceries, housing, and utilities, which tended to reduce the average value shown in the table.

MAJOR EXPENDITURES: HOUSING AND AUTOMOBILES

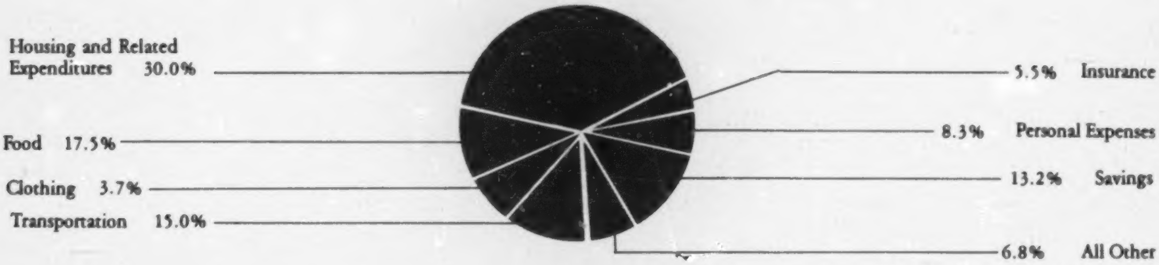
Faculty, staff and student expenditures for housing and automobiles were substantial in fiscal 1983-84. Table 5 reveals that new homes were purchased by 281 faculty members at an average price of $86,571. Homes were purchased by 434 staff members at an average price of $73,485 and by 2,059 students at the somewhat lower average price of $61,867. The total impact of these expenditures on the housing market amounted to more than $183 million. Similarly, faculty, staff and student purchases made a significant impact on the automobile market (Table 6). Nearly 12,000 automobiles were purchased by these groups during 1983-84, with total spending exceeding $67 million.

DIRECT AND INDIRECT EMPLOYMENT IMPACT

The employment impact of the university is shown in Table 7. Overall, 17,786 jobs were created by the expenditures of the university and its faculty, staff and students. Faculty and staff employment positions totalled 5,772. Student spending created 4,896 jobs in

FIGURE II
ASU FACULTY EXPENDITURES AS A PERCENTAGE
OF MONTHLY FACULTY BUDGET

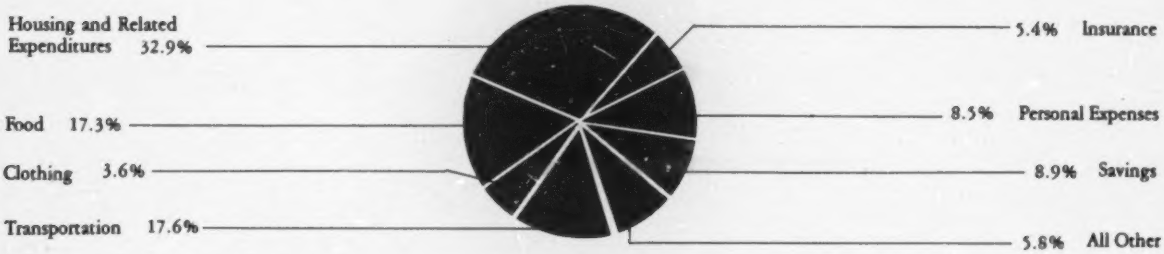
Fiscal 1983-84



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE III
ASU STAFF EXPENDITURES AS A PERCENTAGE
OF MONTHLY STAFF BUDGET

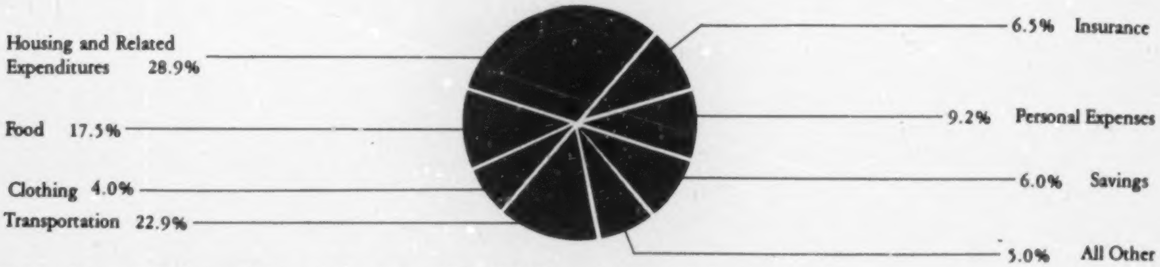
Fiscal 1983-34



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE IV
ASU STUDENT EXPENDITURES AS A PERCENTAGE
OF MONTHLY STUDENT BUDGET

Nine-Month 1983-84 Academic Year



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 5
HOUSING DEMAND BY ASU FACULTY, STAFF AND STUDENTS
Fiscal 1983-84

	Number of Homes Purchased	*Average Value*	*Total Expenditures (000)*
Faculty	281	$86,571	$ 24,327
Staff	434	73,485	31,893
Students*	2,059	61,867	127,384
TOTAL	2,774		$183,604

*Figures are for the nine-month 1983-84 academic year

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 6
AUTOMOBILE DEMAND BY ASU FACULTY, STAFF AND STUDENTS
Fiscal 1983-84

	Number of Autos Purchased	*Average Value*	*Total Expenditures (000)*
Faculty	715	$7,637	$ 5,461
Staff	1,120	6,376	7,141
Students*	10,074	5,446	54,863
TOTAL	11,909		$67,465

*Figures are for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 7
DIRECT AND INDIRECT EMPLOYMENT IMPACT
Fiscal 1983-84

Employment Source	*Number of Jobs*
Direct Employment	
ASU Faculty and Staff	5,772
Employment Due to Student Expenditures*	4,896
Employment Due to University Expenditures for Supplies, Services, Equipment and Construction	1,111
Indirect Employment	6,007
TOTAL EMPLOYMENT IMPACT	17,786

*Figure is for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

the industries that provide goods in the expenditure categories listed in Table 4. University spending for supplies, services, equipment and construction within Arizona resulted in an additional 1,111 jobs. Using an estimated multiplier of 1.51, indirect employment was found to be 6,007 jobs. This means that for each 100 jobs created by the expenditures of ASU or its faculty, staff and students, 51 additional jobs were generated as a result of re-spending or multiplier effects.

ASU AS AN EXPORTER OF SERVICES

Some $112.6 million in funding was brought into Arizona from grants and non-resident fees as ASU exported research and education to the nation and the world. The role of the university as an exporter of services is illustrated in Table 8. When faculty receive federal grants or other financial support from non-Arizona sources, research services are exported and new dollars are injected into the Arizona economy. These funds are used to purchase supplies and equipment; to create jobs for graduate assistants, lab technicians, and clerical personnel; and to support faculty summer research activity.

During fiscal 1983-84, 317 ASU faculty members received $16 million in grants from sources outside of Arizona. The state provided $10.5 million in salary support for these faculty members. Thus, research grants alone had a taxpayer payback of approximately 150 percent. The provision of educational services to non-Arizona residents resulted in out-of-state and foreign student fees of $28.6 million and non-resident student

TABLE 8
DOLLAR IMPACT OF OUT-OF-STATE FUNDING SOURCES
Fiscal 1983-84

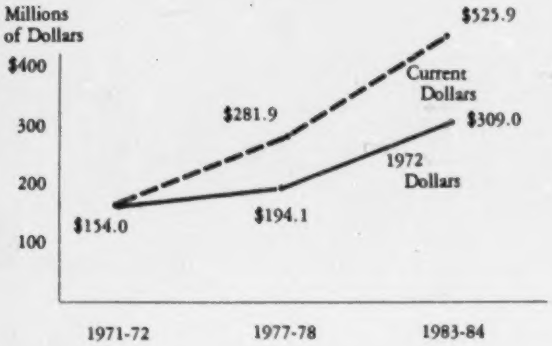
Source	*Amount (Millions)*
Federal and Other Grants	$ 16.0
Out-of-State Student Fees*	24.6
Out-of-State Student Expenditures*	56.0
Foreign Student Fees	4.0
Foreign Student Expenditures	12.0
TOTAL	$112.6

*Figures are for the nine-month 1983-84 academic year.

Source: Office of Research and Sponsored Programs Administration and Office of Management and Financial Analysis, Arizona State University.

expenditures in Arizona of $68 million. In total, $112.6 million from outside Arizona was received as educational services were provided. The net result is that the new dollars brought into Arizona exceeded, by some $10 million, ASU's $92.1 million state appropriation of taxpayer funds for 1983-84.

FIGURE V
COMPAR.SON OF
ASU DIRECT EXPENDITURE IMPACT
Fiscal 1971-72, 1977-78 and 1983-84



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

ASU IMPACT GROWS

The impact of Arizona State University on the state's economy grew from $154.0 million in fiscal 1971-72 to $525.9 million in 1983-84 — a 342 percent increase (Figure V). Expressed in inflation-adjusted, or real, 1972 dollars, the economic impact has doubled since 1971-72. During the same period, enrollment rose 51.5 percent.

ASU's significant and rapidly growing contribution to the economy makes it clear that state money set aside for education offers very favorable returns. The intangible returns include enhancement of commerce, culture, and quality of life via the university's missions of instruction, research and service. Tangible aspects of ASU's impact, as this report illustrates, include millions of dollars in revenue for local industries, tax dollars for the public sector, and thousands of full-time jobs.

In summary, the presence of the university creates a massive, stable marketing area. As a result, society's investment in higher education brings not only desirable intangible benefits but also extremely attractive tangible returns.

Housing Appreciation in the Phoenix Metropolitan Area

JAY Q. BUTLER
TOM R. REX

Housing prices climbed dramatically in the Phoenix metropolitan area during the 1970s, then rose at a slower pace during the early 1980s. An accurate measure of these changes, however, has not been available. As a first step toward developing such a measure, the Bureau of Business and Economic Research and the Arizona Real Estate Institute, in the College of Business at Arizona State University, began in 1983 to publish a report on the number of homes sold in Maricopa County and the median price of these sales.[1] Based on all recorded real estate transactions, this report represents one of the most comprehensive compilations and analyses of market activity currently available. (See page 14 for a complete summary of data from 1981 to the present.)

In metropolitan Phoenix, the median rate of housing appreciation per quarter during the first half of 1984 was the same as it was during the 1981-83 period: 0.8 percent. This article examines the effect of housing characteristics and geographic area on appreciation and compares the appreciation rate to changes in sales prices and inflation.

Jay Q. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as a Faculty Research Associate in the ASU Bureau of Business and Economic Research and is Director of the Arizona Real Estate Institute. Tom R. Rex is the Bureau's Manager of Research Support.

The median sales price, however, is not necessarily a good estimate of the median *value* of homes in the Phoenix area, since the mix of expensive and inexpensive houses that are sold may vary over time. For example, during the last recession in 1982, less expensive homes tended to sell most easily, causing the median sales price to decline. Hence, the change in median sales price is not necessarily a good indicator of housing *appreciation*, especially during a short time period.

The ideal means of measuring appreciation would be to track the sales history of individual properties. Recently, the Bureau used this methodology, which precludes the possibility of comparing unlike samples, to develop a measure of housing appreciation in the Phoenix area. From a data base of more than 130,000 single family sales transactions since 1981, 4,507 single family homes were identified as having been sold at least twice during the period of 1981-1983. The measure of appreciation was developed from the analysis of these properties. Sales that occurred during the first half of 1984 were added and analyzed later.

The Bureau's methodology excluded townhouses and condominiums because complete addresses were not usually available with which to uniquely identify each property (in many complexes, all units have the same street address). In addition, a selection process was used to exclude transactions with questionable information.

HOUSING APPRECIATION, 1981-83

The median rate of appreciation of 4,507 single family houses that sold at least twice during the 1981-83 period was 0.8 percent per quarter, or slightly more than 3 percent per year. As illustrated in Table 1, the rate of appreciation was slower in 1983 than in 1981 and early 1982. (This table can be interpreted as follows: during the third quarter of 1982, for example, 349 single family houses were sold that had also been sold in 1981 or early 1982; these properties had not been resold again through the end of 1983.) The decline in the rate of appreciation resulted from both a slowing general inflation rate and the rather severe recession that began late in 1981.

Neither the date of the original sale during the 1981-83 period nor the elapsed time between sales of a property had much effect on the rate of appreciation per quarter. Only those properties that were resold within two quarters of the previous sale had a different (slower) rate of appreciation.

TABLE 1
MEDIAN RATE OF APPRECIATION PER QUARTER, BY QUARTER OF LAST SALE

Quarter	*Number of Single-Family Houses*	*Median Percent Change Per Quarter*
Second, 1981	17	1.1
Third, 1981	60	1.7
Fourth, 1981	112	1.5
First, 1982	157	1.1
Second, 1982	248	1.0
Third, 1982	349	1.2
Fourth, 1982	378	0.8
First, 1983	531	0.9
Second, 1983	739	0.8
Third, 1983	963	0.7
Fourth, 1983	953	0.9
Total	4,507	0.8

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

The slow rate of appreciation found in this study is comparable to findings at the national level. A National Association of Realtors analysis of national resale home data revealed that the median sales price increased 6.8 percent in 1981, 2.1 percent in 1982, and 3.7 percent in 1983.[2] For the 1981-83 period, median housing prices increased a total of 12 percent, in contrast to a 45 percent increase during the last three years of the 1970s.[3]

Effect of Housing Characteristics on Appreciation

While the overall rate of appreciation was 0.8 percent per quarter, some types of homes had higher or lower rates. New homes (their first sale between 1981 and 1983 was as a newly constructed property) appreciated 1.3 percent per quarter, while resale properties gained only 0.7 percent per quarter. Similarly, houses that were five or fewer years old at the time of their last sale between 1981 and 1983 had a greater rate of appreciation per quarter (1.1 percent) than those between six and fifteen years old (0.6 percent) and those more than fifteen years old (0.7 percent).

The size of the house had a slight impact upon the appreciation rate: The per quarter median increase was 0.8 percent for homes of less than 1,500 square feet, 0.9 percent for houses between 1,500 and 2,250 square feet, and 1.0 percent for dwellings with more than 2,250 square feet. A similar pattern was found when measuring size by the number of rooms in the house: Dwellings with four or fewer rooms appreciated 0.7 percent per quarter, while those with five or more rooms gained 0.9 percent per quarter.

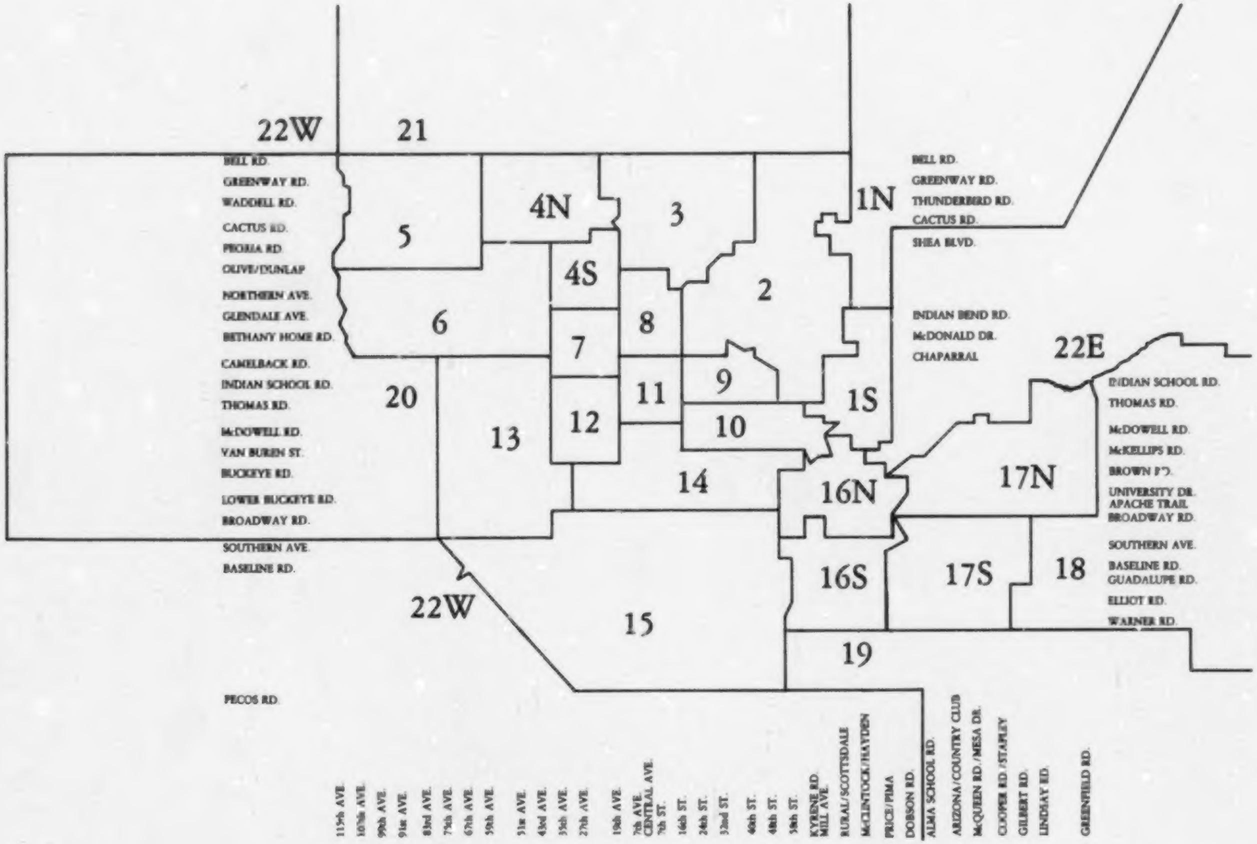
The price of a house also affected its rate of appreciation per quarter: Houses that sold for less than $60,000 (on the last sale) rose in value only 0.4 percent, while those priced between $60,000 and $100,000 appreciated 1.0 percent, and those priced at more than $100,000 gained 1.2 percent.

Housing Appreciation By Geographic Area

In other demographic and real estate studies, Maricopa County has been divided into a number of districts.[4] These districts, illustrated in Figure I, have been used to provide geographic detail to appreciation rates. The areas of Maricopa County with the greatest rates of appreciation between 1981 and 1983 tended to be on the fringe of the Phoenix urbanized area (see Table 2): Paradise Valley (District 2), East Mesa (18), western suburbs (20), Sun City/Youngtown/Peoria (5), and Sun City West (22W). Sun City West, with an appreciation rate double the overall median, constituted nearly all of the sales in district 22W. The areas with the least appreciation were all within the city of Phoenix: the downtown/south central area (14), Metrocenter (4S), Christown (7), mid-town (11), and Maryvale (13).

Since many districts have a greater proportion of newer homes and/or larger homes and/or more expensive homes, much of the variation in the geogaphic appreciation rates can be explained by virtue of these

FIGURE I
PHOENIX METROPOLITAN AREA STATISTICAL DISTRICTS


22W
21
1N
22E
5
4N
3
2
4S
6
8
7
9
20
11
1S
12
10
13
14
16N
17N
16S
17S
18
22W
15
19
BELL RD.
GREENWAY RD.
WADDELL RD.
CACTUS RD.
PEORIA RD.
OLIVE/DUNLAP
NORTHERN AVE.
GLENDALE AVE.
BETHANY HOME RD.
CAMELBACK RD.
INDIAN SCHOOL RD.
THOMAS RD.
McDOWELL RD.
VAN BUREN ST.
BUCKEYE RD.
LOWER BUCKEYE RD.
BROADWAY RD.
SOUTHERN AVE.
BASELINE RD.
PECOS RD.
BELL RD.
GREENWAY RD.
THUNDERBIRD RD.
CACTUS RD.
SHEA BLVD.
INDIAN BEND RD.
McDONALD DR.
CHAPARRAL
INDIAN SCHOOL RD.
THOMAS RD.
McDOWELL RD.
McKELLIPS RD.
BROWN RD.
UNIVERSITY DR.
APACHE TRAIL
BROADWAY RD.
SOUTHERN AVE.
BASELINE RD.
GUADALUPE RD.
ELLIOT RD.
WARNER RD.
115th AVE.
107th AVE.
99th AVE.
91st AVE.
83rd AVE.
75th AVE.
67th AVE.
59th AVE.
51st AVE.
43rd AVE.
35th AVE.
27th AVE.
19th AVE.
7th AVE.
CENTRAL AVE.
7th ST.
16th ST.
24th ST.
32nd ST.
40th ST.
48th ST.
58th ST.
KYRENE RD.
MILL AVE.
RURAL/SCOTTSDALE
McCLINTOCK/HAYDEN
PRICE/PIMA
DOBSON RD.
ALMA SCHOOL RD.
ARIZONA/COUNTRY CLUB
McQUEEN RD./MESA DR.
COOPER RD./STAPLEY
GILBERT RD.
LINDSAY RD.
GREENFIELD RD.

Note: Districts 1N, 18, 19, 21, 22E and 22W extend to the Maricopa County boundaries.

Source: Maricopa County Housing Study Committee.

TABLE 2
MEDIAN RATE OF APPRECIATION PER QUARTER, BY GEOGRAPHIC DISTRICT

District	*Number of Single Family Houses*	*Median Percent Change Per Quarter*
1N — North Scottsdale	134	0.9
1S — South Scottsdale	122	0.7
2 — Paradise Valley	260	1.3
3 — North Sunnyslope/ Moon Valley	372	0.7
4N — Northwest Phoenix	384	0.9
4S — Metrocenter	128	0.4
5 — Sun City/ Youngtown/Peoria	121	1.2
6 — Glendale	208	0.8
7 — Christown	81	0.5
8 — North Central Phoenix	75	0.6
9 — East Camelback	65	0.6
10 — East Central Phoenix	69	0.6
11 — Mid-town Phoenix	72	0.5
12 — West Central Phoenix	71	0.7
13 — Maryvale	373	0.5
14 — Downtown/South Central Phoenix	41	0.0
15 — South Phoenix	190	0.8
16N — North Tempe	80	0.7
16S — South Tempe	172	0.7
17N — North Mesa	188	1.0
17S — South Mesa	388	0.9
18 — East Mesa	281	1.2
19 — Chandler/Gilbert	128	0.9
20 — Western Suburbs	65	1.2
21 — Deer Valley	406	1.0
22W — Sun City West/ Rural Maricopa Co.	28	1.6
Total	4,507	0.8

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

characteristics. For example, the rapid rate of appreciation in the Paradise Valley area (District 2) is largely explained by its high proportion of recently built, large, expensive homes. Similarly, the low rate of appreciation in the Metrocenter area (4S) can be traced to its relatively old homes that are both smaller and lower priced than the metropolitan area's median.

The appreciation in certain districts, however, is not fully explained by these housing characteristics. In particular, greater appreciation than observed would have been expected in the North Scottsdale (District 1N) and South Tempe (16S) areas since the housing is relatively new and expensive. Similarly, houses in the Sun City/Youngtown/Peoria area (5) and in the western suburbs (20) increased more in value than would have been expected, given their moderate ages and prices. Factors such as supply and demand and buyer characteristics may be influencing housing prices in these areas.

One factor that does not appear to be influencing housing appreciation is the proportion of homes sold more than once between 1981 and 1983, compared to the total number of sales in a district. All of the districts with the greatest ratios of multiple sales to total sales, at least 5 percent, were in North Phoenix: Paradise Valley (District 2), North Sunnyslope/Moon Valley (3), Northwest Phoenix (4N), and Metrocenter (4S). Those districts with the smallest ratios of multiple sales to total sales, less than 2.5 percent, included Sun City/Youngtown/Peoria (5), Sun City West (22W), and South Scottsdale (1S).

HOUSING APPRECIATION DURING 1984

The condition of the residential real estate market has improved considerably during the last two years, due to nearly stable interest rates and a strengthening economy, as demonstrated by an acceleration in sales. During 1982, in the depth of the recession, less than 24,000 resale single family houses were sold in the Phoenix area. The number of sales increased to more than 33,000 during 1983 and to an annualized rate of more than 38,000 during the first half of 1984. Of the more than 19,000 existing single family houses that sold during the first two quarters of 1984, more than 2,600 had previously sold between 1981 and 1983. Despite this improved market, the median rate of appreciation per quarter during the first half of 1984 was the same as during 1981-83: 0.8 percent.

This price stability can be explained by the dynamics of the real estate market. The value of real estate responds both to recent sales prices and to expectations for future prices. Since 1982, home prices have been relatively stable. Price stability encourages continued stability, since a seller does not have to realize a large profit from the sale of his/her current home in order to acquire another house. In addition, the overall inflation rate has been relatively low and shows no sign of accelerating. Buyers, therefore, are unlikely to accept a list price that is not reflective of these conditions. Thus, home prices tend to evolve, not radically change, as evidenced by price movements during 1984.

A COMPARISON OF APPRECIATION, SALES PRICES AND INFLATION

From the first quarter, 1981, through the second quarter, 1984, the rate of housing appreciation in Maricopa County has been slightly greater than the change in the median sales price of single family dwellings (see Table 3). Changes in the median sales price have been very uneven, however, with declining prices during the 1981-82 recession responsible for the smaller gain in this measure. Thus, the median sales price may increase more or less than the appreciation rate during any short time period, depending on interest rates and economic conditions in general; over the long term, however, the two measures are likely to indicate nearly the same amount of change.

TABLE 3
INFLATION MEASURES
(Percent Change Per Quarter)

Quarter	*Median Sales Price, Single Family Home*	*Home Appreciation, By Quarter of Last Sale*	*Metropolitan Phoenix Consumer Price Index*
Second, 1981	3.3%	1.1%	1.9%
Third, 1981	2.9	1.7	2.3
Fourth, 1981	−0.7	1.5	2.2
First, 1982	−3.9	1.1	1.6
Second, 1982	−0.6	1.0	0.5
Third, 1982	5.2	1.2	1.0
Fourth, 1982	−2.2	0.8	−2.0
First, 1983	−1.1	0.9	0.2
Second, 1983	4.1	0.8	1.7
Third, 1983	3.1	0.7	1.6
Fourth, 1983	1.4	0.9	0.5
First, 1984	0.3	0.8	1.9
Second, 1984	1.1	0.8	1.5
Total Percent Change (First quarter, 1981, through second quarter, 1984)	13.2%	14.1%	15.9%

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

During the latter part of the 1970s, housing was one of the best hedges against inflation, as home prices usually rose as fast as consumer prices, and frequently at a higher rate. During the 1981-83 period, the rate of appreciation was nearly the same as the overall inflation rate, as measured by the Metropolitan Phoenix Consumer Price Index. Both measures still indicated relatively high rates in 1981 but slowed in 1982. Since the overall inflation rate fluctuates more than the appreciation rate, the two measures may not be consistent during a short time period. In addition, some lag occurs between an acceleration or deceleration in the inflation rate and the response in the rate of appreciation. Over the long term, however, the two measures will be roughly equal.

Again, this pattern is similar to that at the national level. During 1983, consumer prices increased 3.2 percent, while the median price of resale homes rose 3.7 percent. In 1982, consumer prices jumped 6.2 percent, but median resale home values gained only 2.1 percent.

SUMMARY

Since 1981, housing values in the Phoenix area have increased only slightly more than 3 percent per year, a sharp reversal of the rapid appreciation during the late 1970s. The housing market has apparently returned to the norm of prior periods in which the appreciation rate approximated the inflation rate. The old adage that one must own a house for at least three years in order to make a profit (net of real estate commissions and closing costs) appears to again be valid.

The Bureau of Business and Economic Research and the Arizona Real Estate Institute will continue to track housing appreciation in the Phoenix area on a quarterly basis. A complete analysis, similar to that presented in this article, will be performed annually. As more properties sell more than once since 1981, the size of the data base will expand, allowing more detailed analyses, both by geographic area and by housing characteristics.

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[1] Use of the median sales price is superior to use of the mean (average) sales price because the mean can be heavily skewed by extreme values. Because of the sale of a few very expensive homes, the mean sales price tends to be higher than the median sales price.

[2] Frank Katusak, "1983 Ends Four-Year Slide in Resale Market," *Real Estate Quarterly* (Spring, 1984): 4.

[3] "1983: Housing Review," *Real Estate Quarterly* (Winter, 1984): 3.

[4] This districting has been copyrighted by the Maricopa County Housing Study Committee, which granted the Bureau of Business and Economic Research the right to use these designations in this article. These districts are used in the *Phoenix Metropolitan Housing Study* and were used in the *Inside Phoenix* study prior to 1982.

The U.S. Export Trading Company Act: Its Impact

DARA M. KHAMBATA

With fanfare and flourish, Congress passed and President Reagan signed into law the U.S. Export Trading Company Act on October 1, 1982. This landmark legislation removed the threat of antitrust violation for American businesses interested in setting up joint ventures to explore export markets. It also permitted commercial banks to own an interest in exporting ventures, thereby alleviating the common problems of insufficient capital backing for small manufacturers and inadequate support services for prospective exporters.

Individuals who had supported the U.S. Export Trading Company Act insisted that only if the antitrust threat were removed would export trading companies be able to develop the economies of scale necessary to facilitate trade. These economies of scale, along with the advantages of antitrust preclearance, and "countertrade" (the U.S. exporter, in order to complete a deal, promises to buy or market products from the partner nation) would permit U.S. firms to work together in new and unfamiliar ways. Partners might include manufacturers, investment banking firms, insurance companies, brokerage houses, banking firms or venture capital firms. The act would allow them to work with small companies to more effectively compete in world markets, which, in turn, would reverse the decline of America's trade position.

The purpose of this article is to evaluate the impact of the U.S. Export Trading Company Act on U.S. exporting efforts. It also examines the act's provisions, historical basis, and position in the scheme of U.S. export policy.

The U.S. Export Trading Company Act of 1982 has prompted several major U.S. corporations to establish trading companies that handle exports, imports, and third-country sales. They sometimes work with banks to provide the capital backing and support services that small manufacturers need to pursue overseas markets for their goods. This article explores these efforts and evaluates the impact of U.S. trading companies to date.

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U.S. EXPORT TRADING COMPANY ACT

The U.S. Export Trading Company Act authorizes the U.S. Commerce Department to promote export trading companies and also to facilitate interaction between the producers of exportable goods and services and the firms that offer export services. It also allows the Commerce Department to act in consonance with the Justice Department in setting antitrust standards applicable to export trading companies and their certification. The law instructs the Export-Import Bank of the United States to prepare a loan guarantee program for export trading companies and to liberalize rules to increase the negotiability of commercial paper used in international financial transactions.

The act directs the Federal Reserve Board to monitor bank participation in export trading companies. Furthermore, it grants antitrust preclearance to traders and will substantially limit antitrust lawsuits that can be brought by private parties. In other words, the new law gives American business the chance to utilize government-sanctioned export trading institutions.

Fortunately, the U.S. Export Trading Company Act does not say what an export trading company is, only what it can do. This allows American business to use its imagination and ingenuity to define whatever type of trading company will best fit its particular needs.

Important provisions of the U.S. Export Trading Company Act of 1982 are highlighted in Table 1.

TABLE 1
SIGNIFICANT PROVISIONS OF THE
U.S. EXPORT TRADING COMPANY ACT OF 1982

Definition	An export trading company (ETC) is a company doing business in the United States principally for the purpose of exporting goods and services produced in the United States and assisting unrelated companies in the export of their products overseas.
Function	An ETC may perform only one of the following two functions: exporting goods and services or providing facilitating services for unrelated exporters.
Third Country Trade	An ETC, as a company "principally" engaged in exporting, can engage in importing and trade between third countries (countries outside the United States).
Foreign Ownership	Foreign ownership of ETCs is permissible.
Banking	Bank holding companies and bankers' banks may invest up to 5 percent and loan up to 10 percent of their capital and surplus in an ETC. Bank holding companies and bankers' banks may own up to 100 percent of an ETC's stock. The Federal Reserve Board must approve any proposed investment. Under this process, a bank need only notify the FRB of the intended investment. If no objection is made within 60 days thereafter, the bank may proceed with the intended investment. A bank is exempt from the collateral requirements contained in the Federal Reserve Act for loans to its ETC.
Antitrust Certification	The Commerce Department is the certifying agency, subject to the concurrence of the Justice Department. Eligibility for certification is based upon four specific antitrust standards. Only the Secretary of Commerce, not the Justice Department, can revoke or modify a certificate. A certificate holder has complete immunity from U.S. antitrust laws, except for private party lawsuits for actual damages. Such lawsuits are subject to certain limitations (see text of act).

The U.S. Export Trading Company Act leaves the Webb-Pomerene Act (1916) intact, allowing U.S. companies to continue registering as Webb-Pomerene associations with the Federal Trade Commission. It should be noted, however, that the Webb-Pomerene Act does not protect against the filing of private treble damage suits and does not encompass export of services.

HISTORICAL PERSPECTIVE

In order to examine export trading companies from a historical perspective, one must study the world trading operations of Japan's "sogo shosha." The sogo shosha facilitate international trade for manufacturing companies by offering truly one-stop, integrated services. They operate as importers, exporters, distributors, merchants, merchant bankers, trade flow developers, creators of new business, organizers of resource development and procurement, managers for turnkey projects, and financial and investment partners.

To facilitate trade, the sogo shosha take title to goods exported; conduct third country and countertrade; arrange for financing and foreign exchange; provide credit, marketing information and communications; and coordinate transportation and shipping. They also offer insurance coverage and customs documentation, serve as wholesalers and distributors, market products, license and arrange for joint ventures, engineer and construct industrial facilities, and provide follow-up services.

The six largest Japanese trading companies, Mitsubishi, Mitsui, Itoh, Marubeni, Sumitomo and Nisso Iwai deal with a total sales volume of approximately $300 billion. Their profiles have dominated international trade in the 20th century. The largest of the sogo shosha, Mitsubishi and Mitsui, are becoming household words in America, as their international presence is increasingly visible in automobiles, appliances, computers and other products of daily life.

The Japanese model for export trading companies dates to the late 1800s, when government encouraged family-owned businesses to form large monopolies, called "zaibatzu." Their activities enabled Japan to become a large industrial power even though the country possessed few natural resources. After World War II, the zaibatzu were divested into smaller firms. They were reintroduced, however, in the late 1950s, and several small companies soon began to grow into enormous specialized trading organizations. Today, economic power in Japan rests in the hands of these companies, now referred to as the "sogo shosha." Their awesome international marketing network positions the country at the forefront of world trade.

In addition to the sogo shosha, approximately 8,500 smaller trading companies are based in Japan. Not only have they facilitated trade but they are also largely responsible for Japan's meteoric economic growth. In fiscal 1982, total sales by these companies ran approximately $375 billion, or about 30 percent of Japan's GNP. They accounted for close to 50 percent of Japan's exports and 60 percent of its imports.

Other industrialized nations are also successfully competing in world markets by providing government and financial institutions with assistance to support traders in a manner similar to the Japanese model. A specific example would be Korean trading companies such as Samsung, Daewoo, Hyundai, and Samwha. Generally, U.S. export trading companies start from a limited international experience and financial base, hoping to make fruitful partnerships in international trade. The finance function is a critical determinant of their success.

These new U.S. trading companies offer a striking contrast to the giant, century-old sogo shosha of Japan. The sogo shosha are entrenched in many investments and joint ventures worldwide. As they evolve to face the growing challenges of other multinational corporations, they provide a dynamic formula for the organization of U.S. export trading companies.

U.S. GOVERNMENT SUPPORT FOR INTERNATIONAL TRADERS

The Commerce Department is working jointly with other governmental departments and agencies to promote services in international trade. In particular, its objectives are fivefold:

- To heighten use of bilateral arrangements for resolving trade problems
- To remove export disincentives
- To prepare for participation in multilateral trade discussions
- To review reciprocity provisions in U.S. domestic legislation
- To develop adequate statistics on international services trade and investment

In response to the demands of service industries to be on equal footing with manufacturing industries, the International Trade Administration expanded the Office of Service Industries and placed it within the new export development structure of the Commerce Department. The office offers traditional governmental assistance in trade promotion events, counseling and trade contact work. It has targeted six service industry sectors for priority treatment: insurance, architectural and engineering services, information, financial services, transportation and tourism. All of these sectors mesh well with the structure of the new Export Trading Company Act, particularly as exports of services exceed $40 billion per year.

Concomitant with government assistance in expanding international trade, the Reagan administration's commitment to turn over more of the export expansion effort to the private sector has led to the formation of District Export Councils. A major factor in the growing national awareness of exports, their membership comes from manufacturers, banks, trade associations, educational institutions, and state and local governments. The Export Administration Act (1949) gives such organizations support and assistance in solving exporters' problems by coaching new exporters and providing vital information.

RECENT TRENDS

As a result of the U.S. Export Trading Company Act, several banks, retailers and manufacturers created new export trading houses. Sears Roebuck & Co. and First Chicago Corp., the holding company for First National Bank of Chicago, agreed to form a global export trading company, Sears World Trade. The new partners committed approximately $35 million to the venture, which had an initial eight-year term, in the belief that it would give thousands of emerging global companies in the United States the capability to compete in world markets.

Other corporations with export trading companies include K Mart Corp., Security Pacific Corp., First Interstate Bankcorp, Citicorp, etc. J.C. Penney is following in the footsteps of Sears and K Mart, companies that also push their U.S. exports through foreign retail chains. Manufacturers, such as Peabody International Corp. (energy and environmental equipment) and General Electric, have set up separate trading companies.

The blue chip companies of America have devised their export trading companies along the lines of the sogo shosha of Japan. They handle exports, imports and third-country sales. General Electric is investigating heavy industrial lines, particularly companies with similar products that it can offer to many of its well-established customers overseas. The General Electric Trading Company acts as a sales representative, providing market information as well as sales and distribution services. Other services, such as financing and order processing, are also available.

Sears specializes in consumer and light industrial goods. They take title to the merchandise; in essence, the manufacturer receives his money faster, and Sears World Trade does the rest: shipping, documentation and other services related to the sale. With their extensive overseas offices and distributorships already in place, the amount of working capital needed by the new trading companies is limited.

It is widely felt that several more banks will become involved with export trading companies as well as other large industrial firms such as IBM, Dow Chemical, Texas Instruments, Hewlett-Packard, Westinghouse, and General Motors.

AN EVALUATION

Almost no U.S. trading company is making a profit, and most have managed to complete only a handful of small deals. A principal problem is that their managers tend to lack experience and expertise. Some skeptics argue that they may not have the patience to carefully cultivate export markets the way the Japanese have. International trading takes teamwork and is maintained through the personal relationships of professional managers and traders. Most U.S. companies lack such people — generally entrepreneurial and opportunistic individuals — and don't see the need for them.

Even the largest players, such as Sears Roebuck & Co., are stumbling. As a giant general trader with an immense consumer base, Sears World Trade is the best known of trading companies, and its goals have been vast. Its ambition is to become as large as any of the Japanese trading companies. Sears World Trade wants to be able to provide any product that any customer in any location might want. The company had losses of $16.3 million for the five quarters ending March 31, 1984, on revenues of approximately $120 million. Despite these losses, Sears World Trade is making some headway. A major re-evaluation of its five-year plan is underway, and a change in top management has been implemented. In addition, joint ventures have been formed in Germany, Italy, Hong Kong, the Philippines and England.

GE Trading, the largest U.S. trading company, won't be profitable until 1985. Formed in 1982, its volume last year was $500 million, plus countertrade in support of other GE exports valued at approximately $800 million.

The trading company operated by the Port Authority of New York and New Jersey is faltering, and Control Data's high-tech-oriented trading entity went out of business.

The trading company act was passed as the worldwide recession blunted demand for U.S. goods. Many foreign economies lacked currency, and many prime U.S. trading partners, such as debt-burdened Latin American countries, couldn't afford trade. Furthermore, the barter or countertrade requirements of a rapidly increasing number of countries befuddled some U.S. companies, and the rising value of the U.S. dollar hiked prices of U.S. goods 20 to 30 percent. Even the huge Japanese trading companies have felt the pinch — Mitsubishi's U.S. trading volume fell 4.5 percent in 1983.

Thus, the U.S. trade position has weakened considerably and is currently getting worse. The U.S. balance of trade deficit has widened from about $70 billion in 1983 to about $100 billion in 1984. Factors responsible for this deteriorating situation include *ad-hoc* economic policy and a substantially overvalued dollar.

Although no super success stories exist yet among U.S. trading companies, they are likely to occur in time. If the Japanese are to be viewed as a model, hard work and slow growth will make the most successful trading houses.

CONCLUSION

In spite of their similar purposes, there is ample room in international trade for both the Japanese sogo shosha and U.S. export trading companies. The primary challenge to the success of U.S. export policy will be changing the preoccupation of American business to an international orientation. If U.S. manufacturers can be educated to view themselves actively participating in international markets, America may once again become the pre-eminent leader in world trade.

A word of caution is necessary. When the U.S. Export Trading Company Act was passed, Congress was confident that businesses would respond enthusiastically to this stimulus, and exports would increase, improving the balance of trade. However, proponents of the legislation failed to analyze the review process of the Department of Commerce in order to determine if its stringency would effectively eliminate the law's benefits. There is already some indication that this might be the case. The Commerce Department has admitted that the sharing by companies of certain information, in order to obtain a waiver from antitrust laws under the U.S. Export Trading Company Act, may in itself be a violation of the statutes. If this were the case, these companies would be more reluctant to open themselves to government oversight, and the U.S. Export Trading Company Act would have an adverse effect on trade.

Another major question facing U.S. trading companies is whether or not they will find and keep a large and regular customer base to make their services worth the effort. U.S. companies may or may not be willing to hand over their foreign operations to another company. They might welcome the extra sales, but once those sales become substantial, some of the companies will be tempted to drop the trading company and go overseas directly.

Profits from joint export ventures can be calculated only on a long-term basis. However, the American propensity to emphasize short-term returns may cause many corporations to question the viability of their investments. Nonetheless, the acceptance of the trading company concept by some U.S. businesses indicates that it may develop into a highly successful program over the long term. It may not represent the export panacea that some enthusiasts envisioned, but, at the very least, it has enticed many more small and medium-sized firms to consider export marketing.

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Arizona Construction Activity
Second Quarter, 1984

JAY Q. BUTLER

Stimulated by a strengthening economy, construction activity continued to improve through the second quarter of 1984. Leading areas of activity were the multifamily (apartment) and industrial sectors.

A total of 29,593 permits, valued at $1.5 billion, were issued throughout Arizona, in contrast to 31,442 permits worth $979 million for the second quarter of 1983. The $1.5 billion represents the highest level of value achieved during the 1980s. Most of the construction activity continued to occur in the counties of Pima and Maricopa, which combined for 87 percent of the total dollar value compared to 84 percent for a year ago. Specific areas of construction activity are reported in Table 1; the quarterly building permits, new housing starts, and real estate sales tables are at the end of this report.

SECTORAL ACTIVITY

Residential

Maricopa County. Rising interest rates contributed to a 2 percent decline in the number of single family permits issued during the second quarter (5,783) from the first quarter (5,937) and a 13 percent decrease from the 6,670 permits issued a year ago. Even with this reduction in activity, several cities reported a second quarter increase in activity over the first quarter: Glendale (394 permits to 476 permits), Mesa (631 permits to 814 permits), Scottsdale (427 permits to 488 permits) and Chandler (649 permits to 824 permits).

Home construction is a fundamental element of the economy and is important for continued economic development. Even with increasing interest rates, builders have been able to sustain the market through the use of adjustable rate mortgages and other innovative financing and marketing programs. As shown in Table 2, single family activity in the first half of 1984, with 11,720 permits, was greater than it was during the comparable 1983 period, when 11,340 permits were issued.

Remodeling activity continued to be strong, with 1,563 permits ($11 million) issued. A total of 3,759 remodeling permits ($29 million) were issued during the first half of 1984, in contrast to 4,032 permits ($21 million) for the first six months of 1983.

New home sales activity declined slightly from 2,552 homes during the first quarter to 2,541 homes during the second quarter, comparable to the 2,457 new homes sold during second quarter, 1983. The metropolitan median sales value increased over the first quarter from $74,750 to $75,875, in contrast to the $68,425 value of second quarter, 1983. Some of the price movement can be explained by the increased sales of higher-priced homes. During second quarter, 1983,

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only 26 percent of all new home sales were for more than $80,000. During second quarter, 1984, 41 percent of the new home sales were for more than $80,000. The movement to higher-priced homes is also reflected in permit activity. Although the number of permits declined from the first quarter level, the dollar value increased from $376 million to $383 million during the second quarter.

In the resale market, the number of homes sold increased from 8,520 during the first quarter to 10,492 for the second quarter. The median sales value increased slightly from $71,225 in the first quarter to $72,000 during the second quarter. Unlike the new home sector, the resale sector has not demonstrated increased sales activity in the higher-priced home category. For the second quarter, 1983, 30 percent of the homes were sold for more than $80,000, compared to 37 percent during the second quarter, 1984. More information on sales activity is reported on page 29 of this issue.

Rest of Arizona. Activity in the single family home sector also declined in Pima County from 1,224 permits issued during the first quarter to 1,134 permits during the second quarter. As shown in Table 2, single family activity for the first half of 1984, with 2,358 permits issued, was slightly less than the 2,443 permits issued during the first half of 1983. Mobile homes continued to play an important role in the Pima County housing market. The 1,210 permits issued during the first half of 1984 contrasted with only 950 permits issued in Maricopa County.

Following the pattern established in the metropolitan counties during the second quarter, single family activity in the other counties decreased 12 percent from the first quarter level (1,867 permits to 1,637 permits). Total dollar value, however, increased from $75 million to $76 million. The most activity occurred in the cities of Sierra Vista (65 permits), Flagstaff (89 permits), and Lake Havasu City (102 permits); and in the unincorporated areas of Gila (93 permits), Coconino

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Second Quarter 1984, First Quarter 1984, and Second Quarter 1983)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MARICOPA COUNTY										
Second Quarter, 1984.....	5,783	383,006,339	487	338,600,771	112	78,626,521	220	54,795,378	134	52,279,204
First Quarter, 1984.......	5,937	376,639,887	613	254,155,458	70	72,215,918	222	38,009,677	167	35,259,999
Second Quarter, 1983.....	6,670	325,482,709	403	140,029,283	59	27,080,694	124	23,980,172	90	20,089,026
PIMA COUNTY										
Second Quarter, 1984.....	1,134	65,622,789	138	60,050,408	26	13,297,945	23	2,832,202	33	11,910,507
First Quarter, 1984.......	1,224	67,436,367	59	54,556,789	22	16,315,800	14	2,091,068	10	2,439,100
Second Quarter, 1983.....	1,307	69,660,397	22	39,392,814	31	13,076,762	22	8,419,584	4	1,376,000
REST OF ARIZONA										
Second Quarter, 1984.....	1,634	75,909,428	44	10,916,989	48	5,114,991	76	8,591,830	37	13,716,414
First Quarter, 1984.......	1,867	74,896,281	24	6,455,683	19	1,864,169	132	22,138,494	24	1,946,662
Second Quarter, 1983.....	1,622	69,858,948	31	11,472,261	34	2,887,876	64	5,038,497	28	1,578,241
ARIZONA TOTAL										
Second Quarter, 1984.....	8,551	524,538,556	669	409,568,168	186	97,039,457	319	66,219,410	204	77,906,125
First Quarter, 1984.......	9,028	518,972,535	696	315,167,930	111	90,395,887	368	62,239,239	201	39,645,761
Second Quarter, 1983.....	9,599	465,002,054	456	190,894,358	124	43,045,320	210	37,438,253	122	23,043,567

[a] Five or more housing units.
[b] Office, banks, medical and professional buildings.
[c] Shopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

(124 permits), Navajo (203 permits), Yavapai (208 permits), and Yuma (100 permits). Mobile home activity declined from 1,402 permits issued during the first quarter to 1,312 permits for the second quarter. Mohave County again led this sector, with 387 permits, followed by Yavapai (183 permits), Pinal (182 permits), Yuma (156 permits) and Coconino (128 permits).

Commercial

Maricopa County. The multifamily (apartment) sector continued to dominate commercial construction activity during the second quarter, with 487 permits ($338 million) issued. As presented in Table 2, 35,459 housing units were permitted during the first half of 1984, compared to 23,349 units for the same period in 1983. Apartments (five or more units) accounted for 21,071 units, compared to only 9,820 units during the first six months of 1983. In Mesa, 3,943 multifamily units ($125.6 million) were permitted in June as developers anticipated an increase in sewer and water fees. Even with the record level of activity, the apartment vacancy rate was a fairly typical 11 percent.

The three-to-four family sector continued to decline, from 189 permits in the first quarter to 160 permits. As in the past, most of the activity occurred in Mesa (53 permits) and Phoenix (57 permits).

The office building sector improved again, moving from 70 permits ($72 million) during the first quarter to 112 permits ($79 million). This activity is a definite improvement over the 59 permits ($27 million) issued during the second quarter of 1983. Office building activity was most evident in Chandler (6 permits at $3 million), Glendale (7 permits at $3 million), Mesa (14 permits at $8 million), Phoenix (67 permits at $43 million), Scottsdale (7 permits at $6 million), and Tempe (5 permits at $19 million). In Tempe, two major projects were permitted, one worth $11 million (240,000 square feet), the other valued at $5.5 million (113,000 square feet). Phoenix projects receiving permits include a 111,000-square-foot building ($3.6 million), a 176,000-square-foot project ($2.1 million), and a 102,000-square-foot complex ($4 million).

The retail sector improved significantly, moving from 222 permits worth $38 million in the first quarter to 220 permits valued at $55 million. Like the office building sector, retail sector activity picked up from

TABLE 2
ARIZONA HOUSING ACTIVITY
(First Half 1983 and First Half 1984)

	BUILDING PERMITS ISSUED					
	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
MARICOPA COUNTY						
1983	11,340	859	191	237	667	23,349
1984	11,720	950	161	349	1,100	35,459
PIMA COUNTY						
1983	2,443	1,369	46	17	44	8,040
1984	2,358	1,210	72	34	197	9,119
REST OF ARIZONA						
1983	2,662	2,938	28	71	41	6,480
1984	3,501	2,714	62	53	68	7,237
ARIZONA TOTAL						
1983	16,445	4,766	265	325	752	37,869
1984	17,579	4,874	295	436	1,365	51,815

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

year-ago levels, with 124 permits ($24 million). Areas of activity include Glendale (3 permits valued at $2 million), Mesa (19 permits valued at $18 million), Phoenix (63 permits valued at $14 million), and Tempe (15 permits valued at $3.5 million).

Rest of Arizona. As in Maricopa County, second quarter apartment development in Pima County was very strong, with 138 permits ($60 million) issued. During the first half of 1984, 197 permits were issued for 5,271 units, in contrast to the 44 permits for 4,068 units issued during the same period last year (See Table 2). In the office building sector, 26 permits were valued at $13 million, which is comparable to both the first quarter and year-ago figures. Stability was also evident in the retail sector, with 23 permits worth $2.8 million (See Table 2).

The apartment sector continued to expand in the non-metropolitan counties, with 44 permits ($11 million) issued, well above the 24 permits ($6 million) of the first quarter. Areas of apartment development include Eagar (1 permit for 24 units), Mohave Valley North (26 permits for 245 units), and Prescott (2 permits for 14 units). The office building sector also improved from 19 permits ($2 million) during the first quarter to 48 permits ($5 million). Primary areas of activity include Cochise County (4 permits at $1 million), Mohave Valley South (1 permit at $144,000), Navajo County (1 permit at $122,000), Casa Grande (6 permits at $882,000), and Yuma (6 permits at $1 million). With 76 permits worth $8.5 million, the retail sector declined appreciably from the first quarter, when 132 permits valued at $22 million were issued.

Industrial

The industrial sector in Maricopa County continued to strengthen over the first quarter (167 permits at $35 million) to 134 permits ($52 million). This was also a definite improvement over the year-ago level of 90 permits worth $20 million. Areas of industrial development activity during the second quarter included Gilbert (10 permits at $4 million), Glendale (5 permits at $1.3 million), Mesa (7 permits at $3 million), Phoenix (52 permits at $25 million), Scottsdale (3 permits at $2.2 million) and Tempe (49 permits at $12 million).

During the first quarter, much of the permit activity was for remodeling or expanding existing structures; however, the development of new buildings was more evident during the second quarter. For example, Tempe issued 33 permits ($8.4 million) for new buildings and 59 permits ($4 million) for alterations during the first quarter, while the second quarter figures include 40 permits ($2.1 million) for alterations and 28 permits ($10 million) for new buildings. Increased construction of new buildings demonstrates the growth of the economy.

Pima County reported a strong advance in industrial development, with 33 permits ($12 million) issued. This was well above the first quarter level of 10 permits ($2.4 million) and the year-ago figure of 4 permits ($1.3 million). Most of the activity occurred in the unincorporated areas of the county.

Throughout the rest of Arizona, industrial activity followed the same pattern, with 37 permits ($13 million) issued, which is well above the 24 permits ($2 million) issued during the first quarter. Most of the industrial activity was accounted for by one permit worth $10 million that was issued in Casa Grande.

LOOKING AHEAD

During the 1980s, the economy has been undergoing a tremendous transformation that includes deregulation, changes within the financial institutions, and significant growth in newer areas of the economy such as electronics, services, and high technology. These changes, coupled with high interest rates, have created an economic environment of great uncertainty but great promise, especially in Arizona.

Innovation has been the primary means for the construction industry to overcome uncertainty and has been especially evident in the areas of financing, marketing, and building technology. During previous recoveries, the single family sector led the industry. In contrast, the current recovery is being driven by the apartment sector and other commercial development. The growth in these sectors is fueled by economic expansion and the use of new financing forms, such as syndication and joint venture. This activity is especially evident in Pima and Maricopa counties.

Although the single family sector is not dominant, it has been able to maintain a good level of activity due to population growth, consumer confidence, and new mortgage formats. The use of adjustable rate mortgages, with their low initial interest rates, has been increasingly popular with lenders and borrowers alike. Concern exists about the impact of higher interest rates on the ability of people to make payments, although failure to do so has yet to become evident. While innovative financing is important, it would be of little use unless people were willing to buy homes. Given current market activity, it appears that people have the willingness, for the economy is strong and consumer confidence is good. In the metropolitan counties, the unemployment rate has been decreasing. Hence, people have confidence about their economic future and are willing to make long-term commitments.

It is evident from construction activity in the second quarter that economic growth is not occurring statewide. Due to reliance on the mining and forest products industries, several counties have not really participated in Arizona's recovery. Hence, residents have little confidence in their economic futures; this, in turn, will adversely affect the real estate market in these areas. In order for economic development and population growth to occur throughout the state, each county will have to establish an economic base that will instill confidence in its residents' economic future.

While new real estate concepts are useful, the key to growth is still confidence in the future. Given the economic potential of Arizona, confidence is high, providing the stimulus for development. The only negative is the level and direction of interest rates, which not only affect the cost of development but also confidence concerning the future. As long as builders and consumers are able to use innovative means for limiting the impact of high rates, the long-term outlook for Arizona is very good for expanding construction activity.

Arizona New Housing Starts: Quarterly Report

SECOND QUARTER, 1984

	BUILDING PERMITS ISSUED					
	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
APACHE COUNTY	38	9	0	0	1	71
Eagar	12	3	0	0	1	39
St. Johns	1	4	0	0	0	5
Springerville	4	0	0	0	0	4
Unincorporated	21	2	0	0	0	23
COCHISE COUNTY	127	97	0	0	1	233
Benson	0	7	0	0	0	7
Bisbee	2	0	0	0	0	2
Douglas	5	0	0	0	0	5
Huachuca City	0	0	0	0	0	0
Sierra Vista	65	25	0	0	0	90
Tombstone	1	5	0	0	0	6
Unincorporated	54	56	0	0	1	119
Willcox	0	4	0	0	0	4
COCONINO COUNTY	235	128	9	3	1	403
Flagstaff	89	22	8	1	1	141
Fredonia	0	6	0	0	0	6
Page	17	12	0	2	0	37
Unincorporated	124	85	0	0	0	209
Williams	5	3	1	0	0	10
GILA COUNTY	131	66	0	1	0	201
Globe	1	0	0	0	0	1
Hayden	0	0	0	0	0	0
Miami	1	0	0	0	0	1
Payson	34	32	0	1	0	70
Unincorporated	95	34	0	0	0	129
GRAHAM COUNTY	15	37	0	0	0	52
Pima	1	4	0	0	0	5
Safford	6	1	0	0	0	7
Thatcher	4	11	0	0	0	15
Unincorporated	4	21	0	0	0	25
GREENLEE COUNTY	2	1	0	0	0	3
Clifton	0	1	0	0	0	1
Duncan	1	0	0	0	0	1
Unincorporated	1	0	0	0	0	1
LA PAZ COUNTY	4	48	0	0	1	57
Parker	0	0	0	0	1	5
Unincorporated	4	48	0	0	0	52
MARICOPA COUNTY	5,783	437	65	160	487	18,702
Avondale	15	21	0	0	0	36
Buckeye	1	2	0	1	0	7
Chandler	824	0	3	1	1	1,058
El Mirage	0	0	0	0	0	0
Gila Bend	1	0	0	0	0	1
Gilbert	74	1	0	6	7	179
Glendale	476	0	6	0	98	1,779
Goodyear	4	0	0	0	0	4
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	814	0	5	53	57	6,793
Paradise Valley	24	0	0	0	0	24
Peoria	409	0	6	0	1	565
Phoenix	1,452	82	43	57	195	4,562
Scottsdale	488	1	0	8	52	1,029
Surprise	2	12	0	0	0	14
Tempe	260	0	2	6	51	1,016
Tolleson	1	0	0	0	0	1
Unincorporated	933	318	0	25	25	1,615
Wickenburg	5	0	0	2	0	11
Youngtown	0	0	0	1	0	8
MOHAVE COUNTY	222	387	2	5	30	900
Kingman City	28	0	0	0	0	28
Kingman Area	13	72	0	0	0	85
Lake Havasu City	102	6	0	3	4	142
Lake Havasu Area	0	9	0	0	0	9
Mohave Valley N.	42	156	2	2	26	455
Mohave Valley S.	10	97	0	0	0	107
Dolan Springs	5	19	0	0	0	24
Sacramento Valley	7	26	0	0	0	33
Mohave General	15	2	0	0	0	17
NAVAJO COUNTY	224	14	0	0	0	238
Holbrook	0	0	0	0	0	0
Show Low	11	10	0	0	0	21
Snowflake	4	0	0	0	0	4
Taylor	3	0	0	0	0	3
Unincorporated	203	0	0	0	0	203
Winslow	3	4	0	0	0	7
PIMA COUNTY	1,134	586	46	6	138	4,399
Marana	0	6	0	0	0	6
Oro Valley	8	0	0	0	0	8
South Tucson	3	0	0	0	0	3
Tucson	266	137	46	6	21	1,750
Unincorporated	857	443	0	0	117	2,632
PINAL COUNTY	83	182	22	10	4	406
Apache Junction	12	84	0	4	1	117
Casa Grande	11	0	0	0	0	11
Coolidge	0	0	0	0	0	0
Eloy	1	4	0	0	0	5
Florence	1	14	1	4	1	38
Kearny	1	0	0	0	0	1
Mammoth	0	2	0	0	0	2
Superior	1	0	0	0	0	1
Unincorporated	56	78	21	2	2	231
SANTA CRUZ COUNTY	27	4	0	0	0	31
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	0	4	0	0	0	4
Unincorporated	27	0	0	0	0	27
YAVAPAI COUNTY	381	183	13	8	3	648
Chino Valley	11	27	0	0	0	38
Clarkdale	1	0	0	0	0	1
Cottonwood	15	6	2	0	0	25
Jerome	0	0	0	0	0	0
Prescott	75	15	1	3	2	118
Prescott Valley	71	19	4	1	0	102
Unincorporated	208	116	6	4	1	364
YUMA COUNTY	145	156	2	0	3	315
Somerton	2	0	0	0	0	2
Unincorporated	100	140	2	0	0	244
Wellton	0	0	0	0	0	0
Yuma	43	16	0	0	3	69
Total, Maricopa Co., 2nd Qtr., 1984	5,783	437	65	160	487	18,702
Total, Maricopa Co., 2nd Qtr., 1983	6,670	400	111	144	403	13,797
Percent Change	– 13	9	– 41	11	20	35
Total, Arizona, 2nd Qtr., 1984	8,551	2,335	159	193	669	26,659
Total, Arizona, 2nd Qtr., 1983	9,599	2,692	163	190	456	21,691
Percent Change	– 10	– 13	– 2	1	46	22

N/R: No Report.

Arizona Building Permits: Quarterly Report

SECOND QUARTER, 1984

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE COUNTY	62	1,270,696	2	900,900	0	0	9	99,250	73	2,270,846
Eagar	17	564,860	2	900,900	0	0	2	8,600	21	1,474,360
St. Johns	5	N/C	0	0	0	0	0	0	5	N/C
Springerville	10	N/C	0	0	0	0	1	N/C	11	N/C
Unincorporated	30	705,836	0	0	0	0	6	90,650	36	796,486
COCHISE COUNTY	346	8,489,265	29	7,413,414	2	155,000	434	1,927,181	811	17,984,860
Benson	13	92,050	0	0	0	0	7	12,650	20	104,700
Bisbee	18	127,900	0	0	0	0	2	176,400	20	304,300
Douglas	40	685,310	0	0	0	0	57	266,782	97	952,092
Huachuca City	13	34,614	0	0	0	0	1	3,000	14	37,614
Sierra Vista	112	2,627,602	7	2,409,304	0	0	268	682,936	387	5,719,842
Tombstone	9	39,650	0	0	0	0	22	35,950	31	75,600
Unincorporated	135	4,881,539	19	4,968,500	2	155,000	59	708,913	215	10,713,952
Willcox	6	600	3	35,610	0	0	18	40,559	27	76,760
COCONINO COUNTY	519	17,036,233	47	4,251,930	8	734,460	125	1,233,170	699	23,255,793
Flagstaff	184	8,730,957	33	2,495,619	6	593,500	63	907,200	286	12,727,276
Fredonia	10	11,250	2	2,500	0	0	3	3,188	15	16,938
Page	52	1,335,828	2	286,305	0	0	9	190,028	63	1,812,161
Unincorporated	260	6,458,820	7	455,506	1	120,960	35	122,606	303	7,157,892
Williams	13	499,378	3	1,012,000	1	20,000	15	10,148	32	1,541,526
GILA COUNTY	318	5,025,154	4	107,300	5	271,917	51	743,745	378	6,148,116
Globe	10	66,300	0	0	0	0	16	79,447	26	145,747
Hayden	1	500	0	0	0	0	6	2,100	7	2,600
Miami	4	56,344	0	0	0	0	0	0	4	56,344
Payson	138	1,003,836	1	49,300	4	243,917	10	19,456	153	1,316,509
Unincorporated	165	3,898,174	3	58,000	1	28,000	19	642,742	188	4,626,916
GRAHAM COUNTY	107	1,279,748	13	135,000	2	150,400	15	37,450	137	1,602,598
Pima	16	77,212	1	10,000	0	0	11	35,350	28	122,562
Safford	25	307,550	7	69,100	2	150,400	2	600	36	527,650
Thatcher	25	415,200	0	0	0	0	2	1,500	27	416,700
Unincorporated	41	479,786	5	55,900	0	0	0	0	46	535,686
GREENLEE COUNTY	7	103,000	0	0	0	0	2	3,250	9	106,250
Clifton	4	N/C	0	0	0	0	0	0	4	N/C
Duncan	1	68,000	0	0	0	0	2	3,250	3	71,250
Unincorporated	2	35,000	0	0	0	0	0	0	2	35,000
LA PAZ COUNTY	87	1,088,866	5	413,998	5	221,520	21	212,642	118	1,937,026
Parker	9	75,000	3	329,800	0	0	0	0	12	404,800
Unincorporated	78	1,013,866	2	84,198	5	221,520	21	212,642	106	1,532,226
MARICOPA COUNTY	8,052	401,031,749	1,163	536,803,609	134	52,279,204	8,370	112,607,690	17,719	1,102,722,252
Avondale	46	590,700	0	0	0	0	22	65,075	68	655,775
Buckeye	4	22,000	1	50,000	1	50,000	6	94,000	12	216,000
Chandler	976	47,566,397	13	8,593,643	1	706,000	1,235	4,257,895	2,225	61,123,935
El Mirage	11	18,974	2	472,732	0	0	8	55,650	21	547,356
Gila Bend	5	24,542	0	0	0	0	4	30,000	9	54,542
Gilbert	87	4,191,030	14	2,727,382	10	3,904,340	66	349,788	177	11,172,540
Glendale	552	30,243,968	137	34,144,623	5	1,352,272	424	4,492,782	1,118	70,233,645
Goodyear	5	202,412	4	103,000	0	0	30	105,655	39	411,067
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	905	53,225,974	157	235,315,376	7	2,996,997	989	23,100,268	2,058	314,638,615
Paradise Valley	61	4,633,720	3	56,530	0	0	116	991,120	180	5,681,370
Peoria	454	12,838,308	12	2,793,063	3	319,796	338	3,123,361	807	19,074,528
Phoenix	2,373	107,478,856	399	136,653,115	52	25,265,964	2,214	38,081,389	5,038	307,479,324
Scottsdale	595	63,204,346	107	39,650,426	3	2,291,835	612	25,027,944	1,317	130,174,551
Surprise	16	341,996	1	360,000	0	0	17	674,976	34	1,376,972
Tempe	366	21,251,200	151	45,835,900	49	12,065,000	358	4,443,800	924	83,595,900
Tolleson	6	106,437	0	0	0	0	1	9,000	7	115,437
Unincorporated	1,582	54,885,739	156	29,324,819	3	3,327,000	1,924	7,536,230	3,665	95,073,788
Wickenburg	8	205,150	5	493,000	0	0	0	0	13	698,150
Youngtown	0	0	1	230,000	0	0	6	168,757	7	398,757

SECOND QUARTER, 1984

Arizona Building Permits: Quarterly Report (continued)

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
MOHAVE COUNTY	1,110	17,848,078	83	10,602,758	3	439,670	710	2,858,674	1,906	31,749,180
Kingman City	60	1,167,236	15	812,212	0	0	17	543,286	92	2,522,734
Kingman Area	152	2,010,287	4	68,205	2	145,670	204	422,119	362	2,646,281
Lake Havasu City	139	5,012,097	13	1,664,288	0	0	52	344,294	204	7,020,679
Lake Havasu Area	13	127,871	0	0	0	0	10	35,556	23	163,427
Mohave Valley N.	474	5,199,226	34	7,402,975	0	0	219	838,759	727	13,440,960
Mohave Valley S.	160	2,241,818	11	501,338	0	0	113	362,727	284	3,105,883
Dolan Springs	33	501,126	1	41,472	0	0	30	43,053	64	585,651
Sacramento Valley	52	670,617	4	81,164	0	0	43	95,464	99	847,245
Mohave General	27	917,800	1	31,104	1	294,000	22	173,416	51	1,416,320
NAVAJO COUNTY	402	8,935,532	8	1,436,283	2	25,000	49	314,091	461	10,710,906
Holbrook	5	16,500	2	75,000	0	0	4	90,000	11	181,500
Show Low	40	755,358	2	1,029,560	0	0	31	23,926	73	1,808,844
Snowflake	9	N/C	0	0	0	0	0	0	9	N/C
Taylor	4	175,000	0	0	2	25,000	1	9,000	7	209,000
Unincorporated	327	7,797,874	2	182,163	0	0	11	183,165	340	8,163,202
Winslow	17	190,800	2	149,560	0	0	2	8,000	21	348,360
PIMA COUNTY	2,525	72,982,332	215	91,555,454	33	11,910,507	2,017	49,584,282	4,790	226,032,575
Marana	7	N/C	0	0	0	0	0	0	7	N/C
Oro Valley	16	765,052	0	0	0	0	5	34,800	21	799,852
South Tucson	9	337,423	1	182,040	0	0	11	182,114	21	701,577
Tucson	833	18,360,940	79	48,575,254	11	1,574,898	1,178	15,372,637	2,101	83,883,729
Unincorporated	1,660	53,518,917	135	42,798,160	22	10,335,609	823	33,994,731	2,640	140,647,417
PINAL COUNTY	375	5,001,192	36	4,035,509	4	11,157,078	298	8,009,868	713	28,203,647
Apache Junction	113	1,545,423	10	915,098	0	0	136	4,704,990	259	7,165,511
Casa Grande	28	680,956	7	1,285,311	2	10,833,078	35	2,497,661	72	15,297,006
Coolidge	12	41,120	1	9,100	0	0	11	14,000	24	64,220
Eloy	13	51,999	2	25,500	1	300,000	13	12,628	29	390,127
Florence	22	144,000	5	292,000	0	0	2	8,500	29	444,500
Kearny	2	50,400	0	0	0	0	3	6,640	5	57,040
Mammoth	2	N/C	0	0	0	0	0	0	2	N/C
Superior	3	15,500	1	2,500	0	0	5	2,900	9	20,900
Unincorporated	180	2,471,794	10	1,506,000	1	24,000	93	762,549	284	4,764,343
SANTA CRUZ COUNTY	39	1,943,379	0	0	0	0	12	2,649,000	51	4,592,379
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	8	63,179	0	0	0	0	1	12,000	9	75,179
Unincorporated	31	1,880,200	0	0	0	0	11	2,637,000	42	4,517,200
YAVAPAI COUNTY	787	23,643,166	45	4,547,590	2	268,769	352	3,644,342	1,186	32,103,867
Chino Valley	42	737,876	1	55,600	0	0	19	244,108	62	1,037,584
Clarkdale	3	42,333	1	63,755	0	0	4	20,054	8	126,142
Cottonwood	34	1,112,348	10	1,318,751	1	112,129	14	106,587	59	2,649,815
Jerome	7	6,500	0	0	0	0	1	4,000	8	10,500
Prescott	148	4,455,633	10	1,432,254	1	156,640	151	2,273,655	310	8,318,182
Prescott Valley	107	2,982,901	4	339,880	0	0	27	221,636	138	3,544,417
Unincorporated	446	14,305,575	19	1,337,350	0	0	136	774,302	601	16,417,227
YUMA COUNTY	391	11,739,205	20	4,325,880	4	292,600	127	2,639,377	542	18,997,062
Somerton	7	82,000	0	0	0	0	2	612,514	9	694,514
Unincorporated	271	8,718,429	10	2,993,556	4	292,600	54	574,921	339	12,579,506
Wellton	0	0	0	0	0	0	0	0	0	0
Yuma	113	2,938,776	10	1,332,324	0	0	71	1,451,942	194	5,723,042
Total, Maricopa Co., 2nd Qtr., 1984	8,052	401,031,749	1,163	536,803,609	134	52,279,204	8,370	112,607,690	17,719	1,102,722,252
Total, Maricopa Co., 2nd Qtr., 1983	9,453	345,318,377	808	210,604,733	90	20,089,026	8,772	90,153,897	19,123	666,166,033
Percent Change	−14	16	43	154	48	160	−4	24	−7	65
Total, Arizona, 2nd Qtr., 1984	15,127	577,417,595	1,670	666,529,625	204	77,906,125	12,592	186,564,012	29,593	1,508,417,357
Total, Arizona, 2nd Qtr., 1983	17,141	518,688,692	1,120	302,956,731	122	23,043,567	13,059	134,668,533	31,442	979,357,523
Percent Change	−11	11	49	120	67	238	−3	38	−5	54

*Includes mobile homes
N/R: No report
N/C: Some communities do not collect dollar valuations.

Metropolitan Phoenix Real Estate Sales: Quarterly Report

SECOND QUARTER, 1984

MEDIAN SALES PRICE

	Single Family			*Townhouse / Condominium*			
	New	*Resale*	*Total*	*New*	*Resale*	*Total*	*Grand Total*
First Quarter, 1981	$72,600	$62,500	$63,500	$62,950	$58,000	$58,800	$62,800
Second Quarter, 1981	73,700	65,000	65,600	63,500	61,000	61,000	65,000
Third Quarter, 1981	77,900	66,700	67,500	65,000	61,000	61,000	66,500
Fourth Quarter, 1981	75,100	66,500	67,000	67,000	60,000	61,450	66,000
Annual, 1981	74,800	65,000	65,900	64,400	60,000	60,500	65,000
First Quarter, 1982	73,800	63,200	64,400	67,000	55,000	58,500	63,400
Second Quarter, 1982	65,900	63,500	64,000	47,350	61,000	57,000	62,500
Third Quarter, 1982	64,625	68,225	67,350	45,150	60,000	58,000	65,700
Fourth Quarter, 1982	66,100	65,825	65,900	43,950	60,000	55,000	64,600
Annual, 1982	66,100	65,000	65,500	47,025	59,725	57,000	64,325
First Quarter, 1983	65,950	65,000	65,200	46,400	60,000	55,000	64,150
Second Quarter, 1983	68,425	67,500	67,900	50,950	61,750	58,500	66,225
Third Quarter, 1983	71,650	69,525	70,000	52,450	61,000	58,000	68,300
Fourth Quarter, 1983	74,475	69,550	71,000	57,225	62,500	60,000	69,400
Annual, 1983	70,050	68,000	68,650	51,650	61,450	58,000	67,000
First Quarter, 1984	74,750	69,525	71,225	56,300	62,000	60,000	69,500
Second Quarter, 1984	75,875	70,500	72,000	62,950	65,000	64,000	70,450

NUMBER OF SALES

	Single Family			*Townhouse / Condominium*			
	New	*Resale*	*Total*	*New*	*Resale*	*Total*	*Grand Total*
First Quarter, 1981	818	7,821	8,639	204	1,171	1,375	10,014
Second Quarter, 1981	717	10,204	10,921	161	1,579	1,740	12,661
Third Quarter, 1981	529	9,968	10,497	143	1,488	1,631	12,128
Fourth Quarter, 1981	341	7,013	7,354	106	1,020	1,126	8,480
Annual, 1981	2,405	35,006	37,411	614	5,258	5,872	43,283
First Quarter, 1982	429	4,888	5,317	152	987	1,139	6,456
Second Quarter, 1982	610	5,152	5,762	383	866	1,249	7,011
Third Quarter, 1982	1,260	7,136	8,396	373	1,095	1,468	9,864
Fourth Quarter, 1982	1,665	6,699	8,364	479	1,104	1,583	9,947
Annual, 1982	3,964	23,875	27,839	1,387	4,052	5,439	33,278
First Quarter, 1983	1,804	7,052	8,856	547	1,093	1,640	10,496
Second Quarter, 1983	2,457	8,766	11,223	687	1,056	2,193	13,416
Third Quarter, 1983	2,613	9,672	12,285	639	1,368	2,007	14,292
Fourth Quarter, 1983	2,684	8,151	10,835	668	1,091	1,759	12,594
Annual, 1983	9,558	33,641	43,199	2,541	5,058	7,599	50,798
First Quarter, 1984	2,552	8,520	11,072	694	1,216	1,910	12,982
Second Quarter, 1984	2,541	10,492	13,033	796	1,508	2,304	15,337

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

A Survey of Arizona Business Conditions

HAROLD FEARON

MAY

The Arizona economy expanded at a lively pace again in May, and the rate of growth was consistent with the April rate. New orders, production, and employment grew briskly, and inventories increased. Prices also rose but at a somewhat lower rate. Delivery times continued to lengthen. The current expansion, now in its 17th month, will strengthen throughout the balance of the year. Interest rates and prices will continue to increase, and the rate of growth will moderate somewhat during the second half of the year.

Now in its 22nd year of monthly reporting on the condition of the Arizona economy, the purchasing business survey gathers data through a questionnaire sent at the close of each month to purchasing managers throughout the state. They indicate the direction of activity — higher, unchanged, or lower — on seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace. Their aggregate readings have accurately charted the course of the economy over the past two decades and have provided data on turning points several weeks earlier than comparable government data.

Prices

Prices paid for major purchased items continued to increase but at a somewhat lower rate than in April. While 45 percent of the purchasing managers paid higher prices in May than in April, 52 percent said prices were unchanged and only 3 percent reported they paid lower prices. The rate of price increases has been consistently high in each of the five months of 1984 and likely will continue to be high as the strong economic growth begins to put pressure on industry operating rates.

Delivery Time

Delivery time on shipments from vendors stretched for the 19th consecutive month, at a higher rate than in April and at the highest rate since January. Longer delivery times were reported by 49 percent of the firms, compared to only 3 percent that received faster service. The delivery time stretch-out reveals the amount of forward momentum present in the economy, as vendors are hard-pressed to meet delivery schedules.

Inventory Levels

Inventory levels moved up in May at a rate that has been consistent for each month of 1984. Thirty-eight percent of the firms added to purchased inventory, while 15 percent cut stocks. However, the inventory increases are in line with the growth rate and pose no immediate problem. Arizona firms have exercised close control over inventories during this expansion.

Dr. Fearon is The National Association of Purchasing Management Professor in the College of Business, Arizona State University.

New Orders

New orders received from customers rose again, at the highest rate since last February. Fifty-one percent of the firms booked more new business in May than in April, which was more than four times the 12 percent that saw a decline in order receipts. The consistent increase in incoming business has been the driving force behind the economy's smooth upward movement.

Production

Production also increased, at about the same rate shown on the new order indicator. An increase was reported by 44 percent of the firms; only 9 percent cut back output. This was the 17th consecutive monthly production increase.

Employment

Employment was up, for the 16th month in a row, although at a somewhat lower rate than in April. Thirty-two percent of the firms added employees, which was four times the 8 percent that pared payrolls. Employment levels in Arizona are at a new high, and further increases will occur during the balance of the year.

Purchases

Purchases of materials and services continued to increase as needed to support the higher production level. The strong May increase (54 percent of the firms increased purchases; 13 percent reduced purchases) was about the same as recorded in April and continued to be a major factor in stimulating the economy.

Summary

The Arizona economy continued to enjoy a very strong growth rate. All economic indicators signalled further upward movement during the second half of 1984. The only negative note was the upward price trend.

Table 1 presents the May purchasing survey, comparing activity in May with the previous month.

TABLE 1
MAY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (May compared to April)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	45	52	3
Delivery time from vendors......	49	48	3
Purchased materials inventory level	38	47	15
New orders received............	51	37	12
Production....................	44	47	9
Employment..................	32	60	8
Purchases.....................	54	33	13

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

JUNE

The expansion continued in June, with all indicators of economic performance advancing. Prices also rose, at a rate consistent with the first five months of 1984. However, the growth rate definitely slowed — all indicators advanced at a slower pace in June than in May. The June figures probably foreshadow a slight pause in the very strong growth rate of the past several months.

The current expansion, now in its 18th month, will continue during the balance of the year. The higher interest rates will take some pressure off the upswing, and a more moderate and sustainable growth curve will be evident in the second half of 1984. The danger of moving to a much higher inflation rate continues, but a slowing of the expansion will moderate these pressures.

Prices

Prices paid for major purchased items continued to increase at the same rate as in May. This indicator has shown a very consistent increase over each of the first six months of 1984. Forty-five percent of the purchasing managers paid higher prices in June than in May; only 2 percent enjoyed lower prices, and 53 percent said prices were unchanged. Although the price increase rate continued to be uncomfortably high, it didn't show signs of heating up further. If overall growth continues to slow in the months immediately ahead, prices should remain under reasonable control.

Delivery Time

Delivery time on shipments from vendors extended further, as vendors received more new orders than they could handle comfortably. Yet, the June lengthening of delivery time was the smallest registered in the past year (since June 1983), with 44 percent saying deliveries were slower and 10 percent enjoying faster delivery service.

Inventory Levels

Inventory levels of purchased materials increased again but at the lowest rate since November 1983. While 34 percent of the firms added to stocks, 20 percent cut their inventory. Arizona firms have controlled inventories well throughout this economic expansion, a major factor in the strength and consistency of this upswing.

New Orders

New orders received from customers advanced again in June, but the increase was the smallest since November 1983, a definite indication that the pace of growth is moderating. New orders still are very healthy, however, with 44 percent of the firms booking more new business in June than in May, compared to the much smaller 17 percent that saw their order books shrink. This was the 18th consecutive month of new order growth.

Production

Production continued to increase in June, but the growth rate slowed a bit, in line with new orders. The increase rate was the smallest in the last three months. Higher production was reported by 39 percent of the firms, while 14 percent cut output.

Employment

Employment advanced again in June, for the 17th month in a row, although at the smallest rate since January. Twenty-six percent of the firms added to their work force, which was three times the 9 percent that pared payrolls. The number of people employed in Arizona has expanded dramatically during this recovery, and further advances will take place during the balance of the year.

Purchases

Purchases of materials and services went up in June, but the rate of increase was the smallest yet over the sixteen months since March 1983, when this economic indicator was first included in the survey. Forty-seven percent of the firms increased purchases, compared to 21 percent that scaled back their purchase commitments. The moderating purchase order rate is caused by the slowing in new order and production advances and is a good indicator that overall economic growth likely will move at a somewhat slower pace in the second half of the year.

Summary

Economic growth in Arizona was strong in June, as the economy reached for new, higher levels. The rate of growth is slowing, and the balance of the year likely will see a further moderation in the pace of expansion.

Table 2 presents the June purchasing survey results.

TABLE 2
JUNE PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	45	53	2
Delivery time from vendors	44	46	10
Purchased materials inventory level	34	46	20
New orders received	44	39	17
Production	39	47	14
Employment	26	65	9
Purchases	47	32	21

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

JULY

The Arizona economy enjoyed the best of both worlds in July — continued growth and a declining inflation rate — as the major and uninterrupted upswing moved into the last half of its second year. The rate of advance for new orders received, production, purchase commitments, and employment turned in another upbeat performance, although the rate of growth has moderated somewhat over the summer months.

The more modest growth rate of the past two months will continue during the balance of the year and likely will extend the expansion well into 1985 and perhaps beyond. Inflation shows no sign of heating up and probably will stay at a moderate level for the next several months. The somewhat lower growth curve has removed many of the upward price pressures.

Prices

Prices paid for major purchased items advanced, but the rate of increase slowed to the lowest level in more than a year (since April 1983); the rate was approximately half the June increase rate. Thirty-three percent of the purchasing managers paid higher prices in July than in June; 8 percent paid lower prices, while a large 59 percent said prices were unchanged. The rate of inflation has definitely slowed over the past few months, a trend that should hold for the balance of the year.

Delivery Time

Delivery time on shipments from vendors continued to lengthen, at about the same rate as in June. A stretch-out in delivery performance was reported by 44 percent of the purchasing managers, about seven times the 6 percent who received faster deliveries. This expansion has raised output to the point where capacity limits now are creating major delivery problems.

Inventory Levels

Inventory levels remained flat in July, for the first time since early 1983 (February and March). The number of firms that increased inventory (30 percent) was almost offset by those that cut stocks (29 percent). This may be due to difficulties in obtaining shipments from vendors, caused by the lengthening lead times, and to the use by firms of more advanced systems of monitoring and controlling inventory. In any event, there is no present danger that the expansion will be cut short by an excessive inventory overhang.

New Orders

New orders continued to grow but at a rate slightly less than that of the previous month. Forty-one percent of the firms booked more new business in July than in June, which was more than twice the 17 percent that saw their order books shrink. The new order growth rate, while still very healthy, has moderated somewhat during the past five months as the expansion, now in its second year, reaches the mature stage.

Production

Production increased in July, keeping pace with new order growth. Higher output was reported by 39 percent of the firms, compared to 13 percent that cut output. The increase rate was the same as in June and lower than the rate in all but two months so far this year. Even though the increases in production are slowing, the Arizona economy still is performing at a very high level.

Employment

Employment increased for the 18th consecutive month, at a slightly higher rate than in June. Thirty-three percent of the firms added employees in July, while only 13 percent found it necessary to cut payrolls. Employment should continue strong for the balance of the year, as Arizona firms build production to cope with their incoming order flow.

Purchases

Purchases of materials and services continued strong, at the June rate. An increase in purchase commitments was reported by 47 percent of the firms, more than twice the 22 percent that scaled back their buying. The strong increase rate of purchase commitments has provided a major impetus for this economic expansion.

Summary

The current expansion now has surpassed any since the early 1970s. Although growth normally slows in the second year of an expansion, this one now is in its 19th month. Thus, the easing in the growth rate seen in both June and July is normal. The Arizona economy is operating at a high rate of activity and continuing to enjoy significant, although not record, growth in new orders, production, purchase commitments, and employment. This activity level should continue throughout 1984.

Table 3 presents the July survey results.

TABLE 3
JULY PURCHASING SURVEY

Key Indicators	*Percent of Purchasing Managers Indicating Each Response (July compared to June)*		
	Higher	*Same*	*Lower*
Prices paid for major commodities	33	59	8
Delivery time from vendors	44	50	6
Purchased materials inventory level	30	41	29
New orders received	41	42	17
Production	39	48	13
Employment	33	54	13
Purchases	47	31	22

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

AUGUST

Some of the bounce went out of the expansion in August, but all of the indicators remained positive, extending the expansion that began early in 1983 (19 months ago). The rate of increase softened on such key indicators as vendor lead times, new orders received, production, employment, and purchase commitments. However, August still was a good economic month, with solid, if more modest, gains recorded.

This definite slowing in the growth rate will continue for the balance of the year. Yet, the Arizona economy exhibits good, underlying strength, and there are no signs of a shutdown of the expansion — only a more modest, less hectic extension of the upward pace. Prices and inventory levels are well under control, and the expansion should proceed relatively smoothly into 1985.

Prices

Prices paid for major purchased items went up again in August, but the rate of increase was the lowest since April 1983 (17 months ago) when the economy was pulling out of the recession. Thirty-three percent of the purchasing managers paid higher prices in August than in July; 9 percent paid lower prices; and a large 58 percent said prices were unchanged. The relatively low rate of price increases during the past few months and the more moderate growth rate make an early return to the high inflation rates of prior years unlikely.

Delivery Time

Delivery time on shipments from vendors extended a bit further but at the lowest monthly increase rate since April 1983. Longer vendor lead times were reported by 33 percent of the firms, while 8 percent said delivery times were shorter. This reduction in the rate at which vendor lead times are lengthening is a good indicator that the Arizona economy is growing at a slower pace as vendors catch up with their order backlogs.

Inventory Levels

Inventory levels increased slightly for the second month in a row. The 25 percent of firms that added to inventory was almost balanced by the 21 percent that cut stocks. The lower overall growth rate tempers the need to build stocks, and the elimination of inventory additions means that stock building is no longer fueling the economic expansion.

New Orders

New orders received from customers increased again in August, for the 20th consecutive month, but at the lowest rate since January 1983, when the recovery began. Still, the 40 percent of the firms that booked more new business in August than in July was twice the 20 percent that saw their order books shrink. A further indication that the growth rate is slowing is that the rate of increase in new orders has become progressively smaller in each of the past four months.

Production

Production increased again, following the rise in new orders, but the increase rate also was the lowest since January 1983. It has grown at a slower rate each of the past four months. Higher output was reported by 35 percent of the firms; 20 percent reduced operating rates.

Employment

Employment still is growing, but the August increase was only half that of July and the lowest since January 1983. Twenty-six percent of the Arizona firms added to their work force, compared to 15 percent that pared payrolls. August was the 19th consecutive month of employment additions, which shows the strength and duration of the 1983-84 economic recovery.

Purchases

Purchases of materials, supplies, and services by Arizona firms continued to grow but at the lowest rate since this data series was started in March 1983. Thirty-nine percent increased their purchase commitments; 20 percent scaled back their buying. The monthly increase rate on this indicator started slowing in April and has gotten progressively smaller during each succeeding month.

Table 4 presents the August survey results.

TABLE 4
AUGUST PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (August compared to July)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	33	58	9
Delivery time from vendors	33	59	8
Purchased materials inventory level	25	54	21
New orders received	40	40	20
Production	35	45	20
Employment	26	59	15
Purchases	39	41	20

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

Arizona Gross State Product First Quarter, 1984

TOM R. REX

The Arizona economy continued its strong recovery from the 1981-82 recession during the first quarter, with the Arizona Gross State Product (GSP) rising at an inflation-adjusted annual rate of 17.6 percent. This fourth consecutive, double-digit quarterly increase (see Table 1) pushed the annualized GSP, not inflation-adjusted, to $40 billion (see Table 2).

Often referred to as "value added," GSP is the value of production minus purchases of intermediate goods and services. The Arizona GSP is compiled quarterly and annually by the Bureau of Business and Economic Research in the College of Business, Arizona State University, in cosponsorship with the College of Business Dean's Council of 100. For more information, see the Second Quarter, 1984, issue of *Arizona Business*, page 3.

The first quarter GSP growth greatly outpaced that of the Gross National Product (10.1 percent). Since 1960, the GSP and the GNP have posted quarterly growth rates in excess of the first quarter, 1984, rate only four times each. The first quarter GSP gain was led by the finance, insurance, and real estate sector, which experienced the most rapid growth in its history. Other sectors that grew very rapidly include agriculture, for the second consecutive quarter, and the highly cyclical construction industry. In contrast, the GSP of the government sector remained flat, while the mining GSP declined.

Much of the surge in inflation-adjusted GSP was caused by an increase in the productivity of Arizona workers. Output per employee in inflation-adjusted dollars rose at an annualized rate of 11.2 percent during the first quarter, the fourth gain in the last five quarters. The construction sector and the finance, insurance, and real estate sector showed the largest gains in output per employee. Nationally, productivity of workers increased only 2.9 percent during the first quarter.

The inflation-adjusted GSP is estimated to have grown 13 percent during the second quarter, compared to a gain of 7.5 percent in the Gross National Product. The annual average growth in GSP for 1984 is forecast to be 14 percent, which would place 1984 as the best year ever for the Arizona economy.

TABLE 1
PERCENT CHANGE
IN ARIZONA GROSS STATE PRODUCT
AT ANNUAL RATE ADJUSTED FOR INFLATION

Quarter	*1981*	*1982*	*1983*	*1984*
First	13.7	-10.1	6.6	17.6
Second	6.4	-0.8	17.6	
Third	12.7	-5.9	14.7	
Fourth	-0.7	-6.0	14.1	

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 2
ARIZONA QUARTERLY GROSS STATE PRODUCT, AT ANNUAL RATE
(In Billions of Current Dollars)

1983	*Agriculture*	*Mining*	*Construction*	*Manufacturing*	*Transportation, Communication, Public Utilities*	*Trade*	*Finance, Insurance, Real Estate*	*Services*	*Government*	*Total*
1st Qtr . . .	1.017	1.259	2.034	5.295	2.621	5.690	5.736	5.196	4.921	33.769
2nd Qtr . . .	1.053	1.327	2.238	5.672	2.882	5.953	6.027	5.390	4.886	35.429
3rd Qtr . . .	1.054	1.519	2.417	6.064	2.951	6.157	6.160	5.527	5.234	37.083
4th Qtr . . .	1.238	1.625	2.457	6.204	3.120	6.332	6.262	5.751	5.397	38.385
1984										
1st Qtr . . .	1.440	1.572	2.662	6.496	3.270	6.548	6.519	6.000	5.538	40.046

All data in this series are revised quarterly.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Arizona Business Scene

Demographics of the Urban Southwest

TOM R. REX

1912

The American Southwest is a region of open spaces dotted by rapidly growing metropolitan centers. Despite the great distances that separate these urban areas, common historical and cultural features continue to set them apart from the rest of the United States. This article compares the demographics of Arizona's major metropolitan centers with those of comparable urban areas in the region and contrasts them to the national profile, using 1980 Census data. Each city reference in this article implies the entire urban area.

General Characteristics

In the Southwest, Phoenix, Denver, and San Diego have comparable populations, as do Tucson, Albuquerque, El Paso, and Las Vegas (see Table 1). Each of these seven urban areas is growing much more rapidly than the nation as a whole. The rapid population growth of Phoenix and Tucson between 1970 and 1980 was exceeded by the growth of Las Vegas, a city that could soon surpass Tucson in size.

The racial/ethnic composition of the Southwest, compared to the nation, includes a much greater proportion of Hispanics but a smaller proportion of Blacks. Only Las Vegas has a racial distribution near the national average of 6 percent Hispanic and 12 percent Black.

Southwestern residents are slightly younger than the national population, with a median age between 28 and 30 years in each urban area except El Paso, where the median age is a very young 25 years. While the median age in Phoenix and Tucson is less than 30 years, Arizona's metropolitan centers have far more retirees than other Southwestern urban areas: 12 percent of the population, approximately the same as the national proportion.

Married couples make up more than 80 percent of the families in each urban area, with the highest proportions in Phoenix and Tucson. Approximately one-half of the families throughout the Southwest have children living at home, but Phoenix and Tucson have the lowest proportions. In El Paso, 60 percent of the families have children living at home, which is reflected in its average household size of 3.3 people. This number is greater than the 2.6 to 2.7 people per household of other urban areas in the region and in the nation as a whole. Families, defined as at least two related people living together, constitute roughly 70 percent of all households, except in El Paso, where the proportion is more than 80 percent.

Most Southwestern urban areas are in line with the national proportion of working mothers: 46 percent of women with a child less than 6 years and 63 percent of women with a child between 6 and 17 years. The proportion of working mothers is higher in Las Vegas and lower in El Paso.

Social Characteristics

Less than one-half of the residents of each Southwestern urban area were born in their 1980 state

TABLE 1
SOUTHWESTERN URBAN AREAS
SUMMARY OF CHARACTERISTICS, 1980

	Phoenix	*Denver*	*San Diego*	*Tucson*	*Albuquerque*	*El Paso*	*Las Vegas*	*United States*
Population (000)	1,409	1,352	1,705	451	418	454	433	226,546
Population Growth Since 1970 (%)	63	29	42	53	41	35	70	12
Spanish Origin (%)	13	12	15	22	37	62	8	6
Born in State of Residence (%)	28	41	36	30	47	50	18	64
Attended College (%)	41	46	45	42	43	31	33	32
Median Family Income, 1979 ($000)	21	23	20	19	19	15	21	20
Employed by Government (%)	15	16	19	22	22	21	13	17

Source: U.S. Bureau of the Census, *Census of Population and Housing, 1980:* Summary Tape File 3C.

of residence, compared with a national figure of 64 percent. Las Vegas has the fewest lifetime residents — less than 20 percent; in Phoenix and Tucson, the proportion is approximately 30 percent. El Paso and San Diego have large proportions of foreign-born residents.

In part due to the in-migration of people to the Southwest, residents of the region move more frequently than their national counterparts, 46 percent of whom had changed residence between 1975 and 1980. In Las Vegas, 66 percent of the 1980 residents had moved since 1975, with many coming from the Western United States. In Phoenix and Tucson, approximately 60 percent of the 1980 residents had moved since 1975. A relatively large number of people in Arizona's urban areas had moved from the nation's North-central and Northeast regions.

The Southwest has a more highly educated populace than the nation as a whole. More than 40 percent of residents older than 25 years have at least attended college. El Paso, however, with a large proportion of residents who have only an elementary school education, and Las Vegas, with a large proportion of high school educated, have an educational attainment level the same as the national average. Adults in Phoenix and Tucson have slightly less education than those in Denver, San Diego, and Albuquerque.

Economic Characteristics

Nationally, approximately 75 percent of males and 50 percent of females at least 16 years old are employed. The Southwest's labor force participation rates are slightly higher. In Denver and Las Vegas, for example, more than 80 percent of the males and nearly 60 percent of the females are in the work force. Tucson has relatively low participation rates: 72 percent of males and 48 percent of females.

Compared to the nation as a whole, most of the Southwest has a greater proportion of workers in occupations classified as managerial, professional, technical, sales, and administrative support. Las Vegas is the primary exception, with more than twice as many service workers as the other urban areas. El Paso comes closest to the national occupational distribution, with a large proportion of operators, fabricators and laborers.

Employment by government in the Southwest ranges from below the national average in Las Vegas — 13 percent of all workers — to above the national average in Tucson and Albuquerque — 22 percent of the work force. Phoenix has the lowest proportion of federal government workers, while Tucson has the highest proportion of state government workers.

The Southwest's industrial structure is much different from that of the nation, as reflected in employment-by-industry figures (Table 2). The region is less dependent on manufacturing: Phoenix and El Paso have the highest employment by this industry, 18-to-19 percent of the work force, still below the nation's 22 percent. The region has relatively more employment in the construction, trade, and services industries, and in the finance, insurance, and real estate industry. Las Vegas is unique, with one-half of its employment in the services industry and only 4 percent in manufacturing.

TABLE 2
SOUTHWESTERN URBAN AREAS
EMPLOYMENT BY INDUSTRY, 1980
(Percent of Total Employment, 16 Years and Older)

	Phoenix	*Denver*	*San Diego*	*Tucson*	*Albuquerque*	*El Paso*	*Las Vegas*	*United States*
Agriculture, Forestry, Fisheries, Mining	2	3	2	6	2	1	1	4
Construction	8	7	6	8	7	6	8	6
Manufacturing	18	15	17	10	9	19	4	22
Transportation, Communication, Public Utilities	7	9	6	6	7	9	7	7
Trade	23	22	22	23	23	23	19	20
Finance, Insurance, Real Estate	8	8	7	6	7	6	6	6
Services	29	29	33	36	36	29	50	29
Public Administration	5	6	7	5	8	7	5	5

Source: U.S. Bureau of the Census, *Census of Population and Housing, 1980:* Summary Tape File 3C.

People in the Southwest commute to work primarily by driving alone: The proportion is greater than the nation's 64 percent in all urban areas except San Diego. Carpooling is slightly less popular than it is nationally. Only Denver has as many riders of public transportation as the national average (6 percent of all workers). San Diego has an unusually large number of people who walk to work (9 percent).

The median family income is highest in Denver, followed by Phoenix and Las Vegas. The other urban areas are at or below the national average.

Metropolitan Phoenix Consumer Price Index Second Quarter, 1984

TOM R. REX

Prices of goods and services in the Phoenix metropolitan area rose 1.5 percent during the second quarter, 1984, an increase slightly less than that of the previous quarter (see Table 1). The index for all items, 180.1 on a 1977 = 100 base, is 5.6 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research, College of Business, Arizona State University. The quarterly CPI results from comprehensive surveys conducted by the Bureau in cooperative cosponsorship with Valley National Bank.

Three items were responsible for 80 percent of the second quarter advance. Piped gas and electricity costs caused 40 percent of the total increase, rising 15.0 percent, due to a piped gas rate increase and the switch to summer electricity rates. Used car prices again posted a large gain, 5.8 percent, and gasoline prices rose 5.9 percent.

Food and Beverages

Price increases for food and beverages returned to a modest pace during the second quarter, after a larger gain the preceding quarter. Prices of grocery store items rose only 0.5 percent and prices of alcoholic beverages declined, but food away from home price gains were larger (see Table 2).

The advance in the food at home category was led by increases between 1 percent and 2 percent in dairy products, cereal and bakery products, and other food at home. A large, seasonal increase in fresh fruit prices was offset by a comparable seasonal decline in fresh vegetable prices, helping to hold the gain in the fruits and vegetables category to just 0.2 percent. The index for meats, poultry, fish, and eggs declined because of lower prices in all groups except fish and seafood, which experienced the largest increase in at least six years (6.7 percent). The price of eggs fell, after three successive quarters of large gains, but remained 23.1 percent higher than the price of one year ago.

Housing

Housing costs recorded the largest gain in more than two years during the second quarter, primarily caused by the jump in piped gas and electricity rates. Declines in other fuels and in other utilities helped to moderate the advance in the fuel and other utilities category.

Gains in the other major housing categories were small. Homeowners' costs rose only 1.1 percent, although this was the largest climb in the last year. Renters' costs, which increased just 0.4 percent, returned to the prior pattern of small quarterly advances, following a large jump last quarter. The index for household furnishings and operations was unchanged in the second quarter and was below the level of one year ago.

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Percent Change from Preceding Quarter					
Expenditure Category	*Relative Importance*	*1st 1983*	*2nd 1983*	*3rd 1983*	*4th 1983*	*1st 1984*	*2nd 1984*
ALL ITEMS	100.0	0.2	1.7	1.6	0.5	1.9	1.5
Food and Beverages	19.0	2.3	1.5	−0.1	0.4	1.8	0.7
Housing	38.9	−0.5	1.8	0.9	−0.2	0.6	2.0
Apparel and Upkeep	4.8	0.6	1.8	1.0	1.7	2.5	−1.3
Transportation	21.9	−1.9	2.5	3.3	0.5	1.6	2.3
Medical Care	6.6	3.0	1.0	4.7	2.0	11.4	1.1
Entertainment	4.6	1.7	−2.1	−0.2	2.9	1.1	2.3
Other Goods and Services	4.2	2.6	2.7	4.7	0.5	0.8	1.1

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Transportation

Transportation costs continued to accelerate during the second quarter, due to the boost in gasoline prices, which followed two quarters of decline, and to continued large gains in used car prices, which are now 23.0 percent higher than they were one year ago. Lower prices for several items helped to moderate the overall gain in the transportation index. Prices of vehicle parts and equipment declined for the fifth successive quarter. Maintenance and repair costs, public transportation costs, and vehicle finance charges all declined in the second quarter, the latter for the seventh time in the last nine quarters.

Medical Care

The pattern of alternating quarters of large and small advances in the medical care index continued, with a modest 1.1 percent gain during the second quarter, after a record first quarter increase. Health insurance premiums rose an additional 3.4 percent during the second quarter to a level more than 50 percent higher than that of one year ago. Hospital costs increased minimally, while fees for professional services fell slightly.

Other Categories

The index for entertainment climbed 2.3 percent during the second quarter, an unseasonably large increase caused by a double-digit boost in the index for toys and hobbies. The index for apparel and upkeep declined, with lower prices observed for all items except women's and girls' apparel. The other goods and services category recorded its third consecutive modest gain.

Comparison Areas

The second quarter inflation rate in the Phoenix metropolitan area was once again higher than the national average. The Phoenix area experienced greater cost increases in all categories except apparel and upkeep.

As illustrated by the comparisons from one year ago (see Table 3), these larger increases in the Phoenix area are comparable to those in San Diego, which also had inflation greater than the national average during the last year. The Phoenix area's inflation since second quarter, 1983, has been generally comparable to that of the comparison areas, except in the medical care category: Inflation in medical care costs in the Phoenix area has been at least triple that of each of the comparison areas.

Outlook

The inflation rate has temporarily stabilized near 4.5 percent nationally and near 5.5 percent in the Phoenix metropolitan area. The rate is likely to remain stable for at least one more quarter. However, many analysts foresee slightly higher inflation beginning in late 1984.

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
SECOND QUARTER, 1984
(1977 = 100)

Expenditure Category	*Last Qtr. Index*	*This Qtr. Index*	*Percent Change*	*Year-Ago Change*
ALL ITEMS	177.4	180.1	1.5	5.6
Food and Beverages	162.9	164.1	0.7	2.8
Food	163.5	165.0	0.9	3.0
Food at Home	161.9	162.8	0.5	2.6
Cereal and Bakery Products	169.1	171.8	1.6	4.6
Meats, Poultry, Fish, and Eggs	157.4	156.1	−0.8	0.1
Dairy Products	153.2	156.0	1.8	3.0
Fruits and Vegetables	170.9	171.2	0.2	3.7
Other Food at Home	151.2	152.8	1.1	3.5
Food Away from Home	163.9	166.5	1.6	3.7
Housing	185.0	188.7	2.0	3.4
Shelter	198.4	199.8	0.7	3.2
Renters' Costs**	106.2	106.6	0.4	6.6
Homeowners' Costs**	100.8	101.9	1.1	1.9
Fuel and Other Utilities	159.6	174.3	9.2	9.0
Gas (piped) & Electricity	171.2	196.9	15.0	9.2
Household Furnishings and Operations	142.7	142.7	0.0	−0.8
Apparel and Upkeep	141.9	140.0	−1.3	3.8
Transportation	173.4	177.4	2.3	7.9
Private Transportation	170.4	174.8	2.6	8.0
New and Used Cars	178.3	185.5	4.0	16.3
Motor Fuels	189.9	201.1	5.9	4.4
Public Transportation	224.6	221.5	−1.4	6.5
Medical Care	224.5	226.9	1.1	20.1
Entertainment	163.6	167.3	2.3	6.1
Other Goods and Services	159.0	160.8	1.1	7.2

An ** indicates that the base period is second quarter, 1983.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
SECOND QUARTER, 1984

	Percent Change from Last Quarter		*Percent Change from One Year Ago*			
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*	*Denver*	*San Diego*
ALL ITEMS	1.5	1.0	5.6	4.2	3.4	6.5
Food and Beverages	0.7	−0.2	2.8	3.0	3.7	3.1
Housing	2.0	1.1	3.4	4.0	1.9	7.6
Apparel and Upkeep	−1.3	1.4	3.8	1.4	2.5	5.4
Transportation	2.3	2.1	7.9	5.4	4.5	8.5
Medical Care	1.1	1.0	20.1	6.4	5.7	5.6
Entertainment	2.3	0.8	6.1	3.6	3.4	1.2
Other Goods and Services	1.1	0.6	7.2	6.9	9.1	8.9

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics.

ARIZONA SALES OF ELECTRICAL POWER
(In Millions of Kilowatt Hours)

	1984	*1983*	*Percent Change From Prior Year*	*Percent Change From Prior Month*
January	2511.9	2193.2	+14.5%	+ 2.5%
February	2306.7	2085.2	+10.6	− 8.2
March	2376.1	2202.6	+ 7.9	+ 3.0
April	2351.6	2150.0	+ 9.4	− 1.0
May	2985.9	2345.0	+27.3	+27.0
June	3161.2	2834.5	+11.5	+ 5.9
July	3635.0	3350.6	+ 8.5	+15.0

Source: Arizona Power Authority (based on reports from major suppliers).

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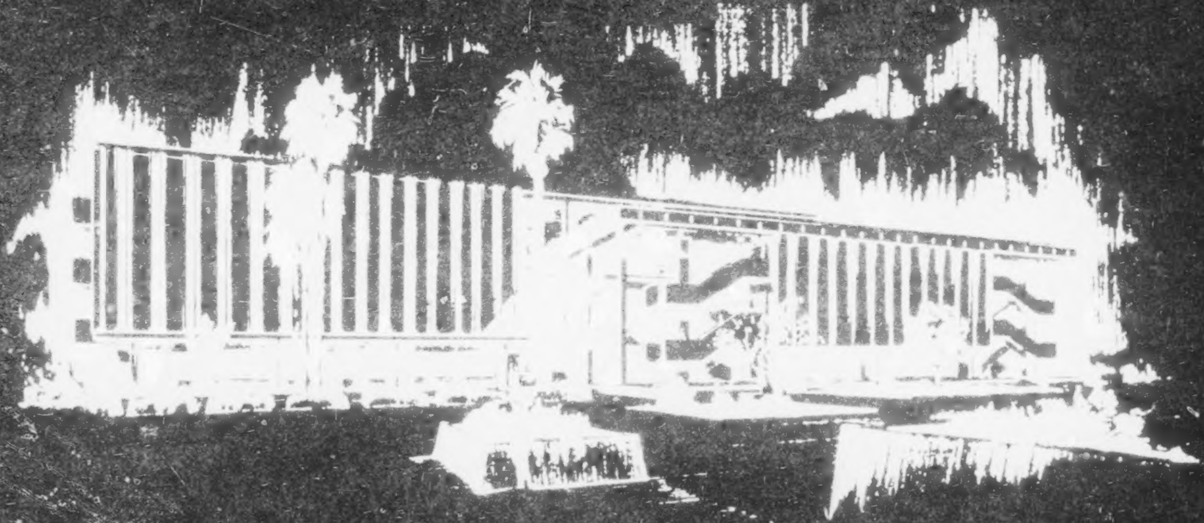
Fourth Quarter, 1984

ARIZONA BUSINESS



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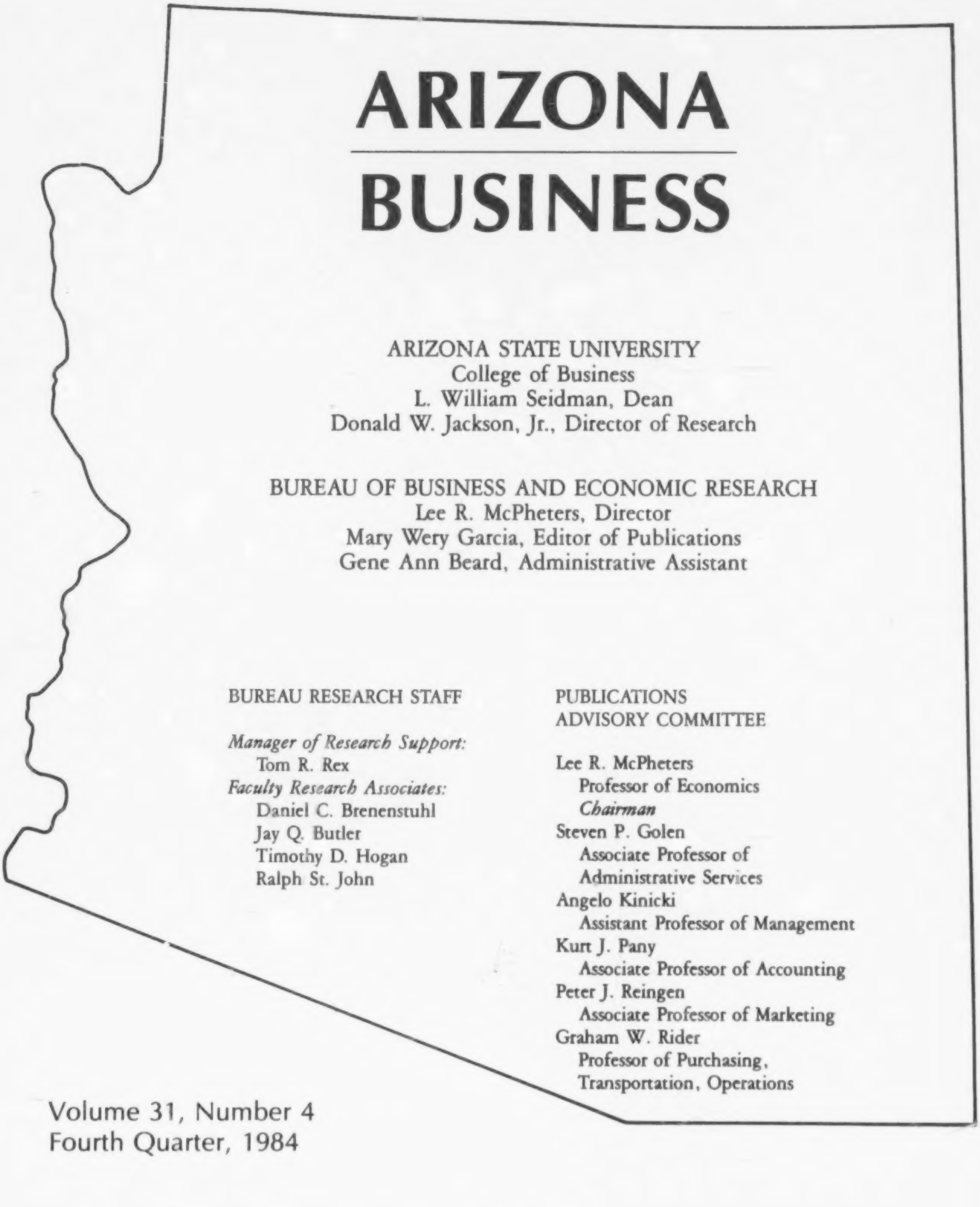

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Report to the Reader

Arizona Business is about to undergo a transformation in format, content and frequency of issue. The changes will reflect feedback received by the Bureau of Business and Economic Research last June, when we randomly selected 900 of our 7,200 readers to participate in a readership survey. The objective of the survey was to ascertain areas in which *Arizona Business* might be improved to make it maximally useful to readers.

A high 25 percent of the sample completed and returned our questionnaire. We discovered that nearly 70 percent of the respondents hold management positions. They are highly educated (75 percent have a college degree, and 50 percent have done post-graduate work) and well-read (87 percent read at least two other professional publications).

Our readers indicated that they desire more timely data than we are able to provide with the current quarterly frequency of issue. Therefore, beginning in March, 1985, we will publish *Arizona Business* on a monthly basis. In order to accomplish this under existing budget constraints, we will change the page count from an average of 40 to an average of 12. Such a page reduction will necessitate shorter articles, a change that will please those respondents who said the publication is too "academic" or "dry," with feature articles too long or detailed. On the whole, however, readers rated *Arizona Business* readability highly (1.8 on a scale of 1 = easy-to-understand to 5 = difficult-to-understand).

Survey results, along with several cross-tabulations, revealed that our readers fall into two main categories: (1) those with rather narrow interests who receive *Arizona Business* primarily for real estate information and, to a lesser extent, for the CPI, and (2) those with broader interests who receive the publication more for its articles than for its ongoing studies. Within the limited page count of the new format, we will attempt to satisfy both types of reader.

Finally, survey respondents have a clear interest in forecasts and projections. Of the Bureau's nine new or proposed data series, those receiving the highest ratings were: Arizona Economic Forecast, Arizona Real Estate Forecast, and Arizona Index of Leading Indicators. Demographic profiles are also of considerable interest. Reports on each of these areas will be included on a regular basis under our new format. Not to keep our readers waiting, however, we begin coverage of your three major areas of interest in this fourth quarter issue, by highlighting them in our three major feature articles.

The Survey of Arizona Business Conditions as a Leading Economic Indicator

HAROLD FEARON
TOM R. REX

The national and Arizona economies each follow a cycle, generally four or five years in length, in which high levels of economic activity (expansions) are followed by declines in activity (recessions). While the timing of the Arizona cycle closely corresponds to that of the national cycle, the level of activity in Arizona is typically more pronounced. The Arizona economy declines more steeply than the national economy during severe recessions, while expansions tend to be more vigorous in Arizona than on the national level. The timing of the economic cycle, particularly the "turning point" from an expansionary period to a recessionary period, is of particular importance.

A slowdown in both the national and Arizona economies has begun during the latter half of 1984, according to the six declining indicators of Harold Fearon's monthly survey of Arizona purchasing managers. This article analyzes the performance of the survey's indicators, both in forecasting Arizona economic activity and as leading indicators for the national economy.

Dr. Fearon is the National Association of Purchasing Management Professor in the College of Business at Arizona State University. Tom R. Rex is Manager of Research Support for the Bureau of Business and Economic Research in the ASU College of Business.

Analysts review a variety of economic measures in order to predict these turning points. Twelve national measures have been formally combined into a monthly Index of Leading Economic Indicators by the U.S. Department of Commerce. Three successive months of decline in this index generally signal an impending recession or a substantial slowdown in the economic expansion.

A specific index of leading indicators for Arizona does not exist, although such an index is currently under development by the Bureau of Business and Economic Research in the College of Business at ASU. However, several highly reliable leading indicators for Arizona regularly outperform the national indicators. They are the key indicators of the monthly survey of Arizona-based purchasing managers, conducted through the ASU College of Business since September 1962.

This article analyzes the performance of the purchasing survey's indicators in forecasting Arizona economic activity. Because the timing of the Arizona and national economic cycles is nearly identical, the authors also assess the survey's key indicators as leading indicators of the national economy.

EVOLUTION OF THE PURCHASING SURVEY

Until 1980, the survey group comprised members of the Purchasing Management Association of Arizona. However, since formation of the Purchasing Management Association of Southern Arizona, survey data have been obtained from both state associations, which encompass all geographic areas of Arizona. The questionnaire is distributed at the end of each month and asks purchasing managers to indicate the direction of activity for that month — higher, unchanged, or lower — on seven measures of economic activity. These purchasing managers represent nearly all sectors of the Arizona economy and deal daily with supply, demand, and price factors in the marketplace. Their aggregate responses have accurately charted the state's economic course for two decades.

Work is currently underway on a faster data reporting system that uses a computer-based methodology for data gathering. Respondents will receive the survey questions over their microcomputer, which is linked to a national telecommunications system called EIES (Electronic Information Exchange System), operated by the New Jersey Institute of Technology. Respondents then will use their computers to provide answers on the direction of change of each indicator.

Pilot tests on collection of the Arizona data were successfully conducted during March and April 1984. Procedures now are being developed to convert the entire Arizona data collection system to the new methodology early in 1985. In addition, a pilot test will be conducted to collect national data, with respondents from the National Association of Purchasing Management using the new telecommunications methodology. This should make the data and the resulting analysis even more timely.

METHODOLOGY FOR ANALYZING PURCHASING SURVEY INDICATORS

Six of the seven purchasing survey indicators were included in this analysis. The seventh, purchases, was added to the survey in March 1983; thus, it was not included in the study since data must be collected for at least one full cycle before its predictive value can be authenticated. The six indicators are:

- prices paid for major commodities
- delivery time from vendors
- purchased materials inventory level
- new orders received
- production
- employment

Data prior to the late 1960s were excluded from the time series of these six indicators because no significant cyclical turning points occurred during this period. The data included in this analysis span more than four economic cycles.

While the "raw" data reported monthly — the percentage of respondents indicating higher, unchanged, or lower activity — are sufficient to provide an indication of economic conditions, it is easier to use one set of data for each of the six indicators: the difference between the percentage of respondents indicating higher activity and the percentage of respondents indicating lower activity. This is referred to as a monthly change index. Since month-to-month fluctuations as well as a seasonal pattern are apparent in the time series for each of the six indicators, each series was seasonally-adjusted and converted to a three-month moving average. The result is six easy-to-interpret, highly accurate indicators of the Arizona economy and, coincidentally, of the national economy. Graphs of each of the six series, compared to the Arizona Gross State Product and to the turning points in the national economy, are presented in Figure I.

THE SIX TIME SERIES

Each of the six seasonally-adjusted moving averages follows a cyclical pattern similar to that of the national and Arizona economies. However, the turning points of each of the six series precede the turning points of the overall economy. Typical peak and trough values for each of the six series, as well as the number of months that the peak value precedes the beginning of the recession and the number of months that the trough value precedes the beginning of the recovery, are summarized in Table 1.

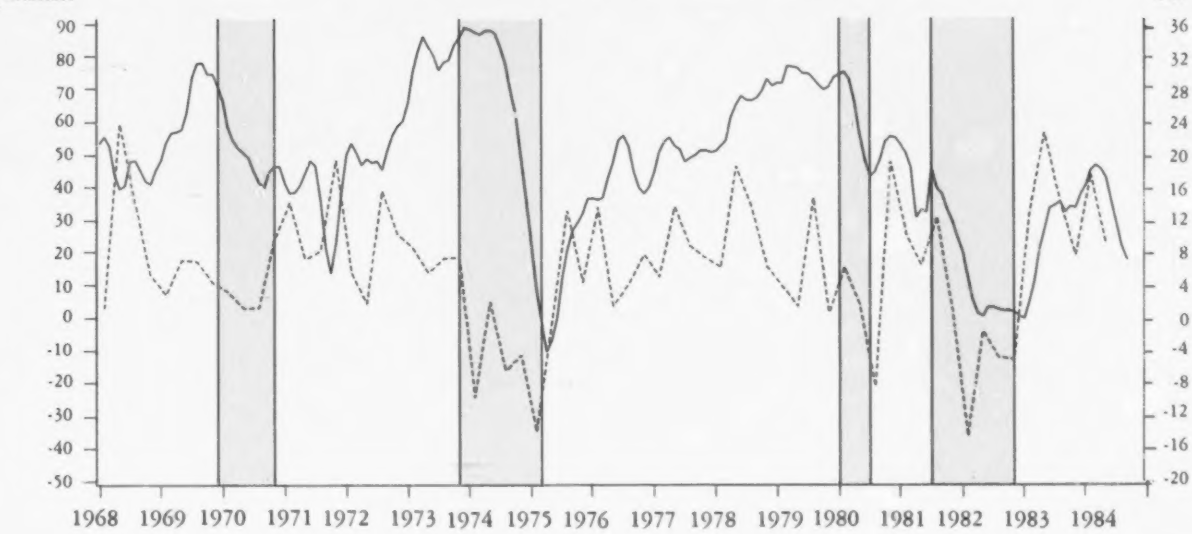
The indicators for production and for new orders received deserve particular attention, since they provide the longest lead times — slightly more than one year, on average — preceding recessions. Employment is also an important leading indicator, only slightly less sensitive than production and new orders. For each indicator, the number of months by which it foreshadows a recovery is less than the number of months by which it foresees a recession. The inventory and price indicators are the slowest in signaling recovery.

Interpreting the Indicators

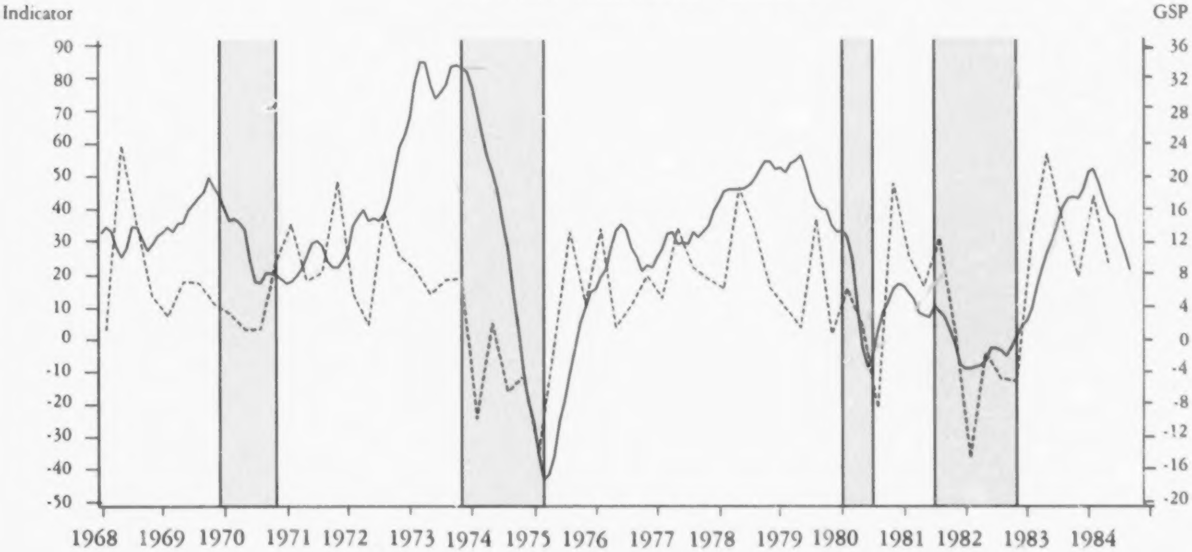
While the magnitude of an indicator helps to identify peak and trough values, it must be interpreted with caution: The indicators generally still have a highly positive value at the beginning of a recession, although the level is steadily declining. In like manner, the indicators are usually still negative at the beginning of a recovery, although the value is approaching zero. Thus,

FIGURE I
COMPARISON OF THE PURCHASING SURVEY INDICATORS AND THE ARIZONA GROSS STATE PRODUCT (GSP)*

PRICES PAID FOR MAJOR COMMODITIES



DELIVERY TIME FROM VENDORS

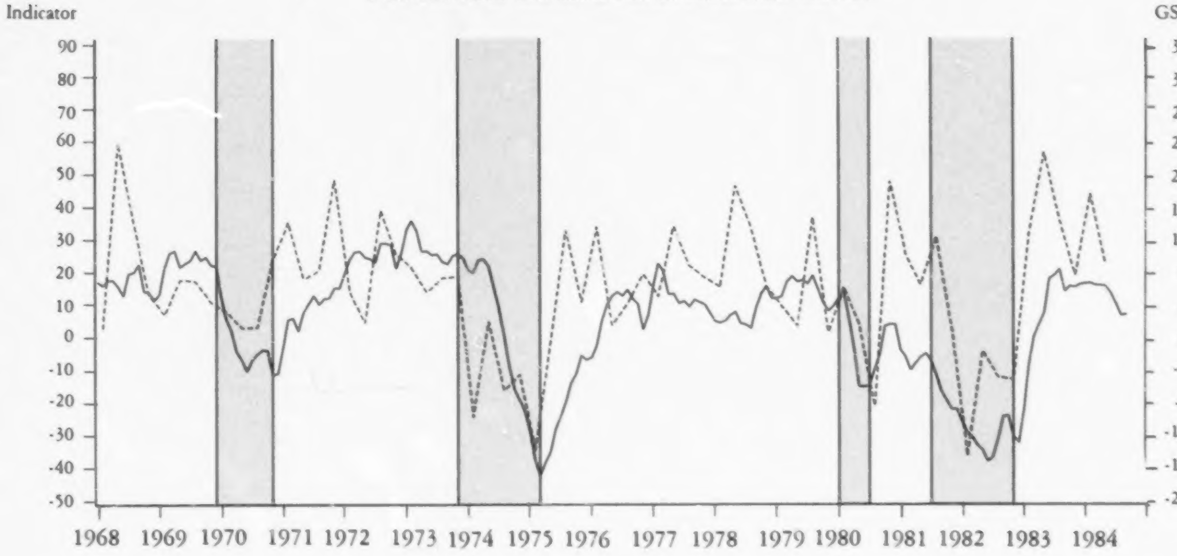


*The purchasing survey indicators are seasonally-adjusted and are moving averages (refer to the solid line and to the left scale). The GSP data are the annualized quarterly percent changes (refer to the dashed line and to the right scale). National recessionary periods are shaded.

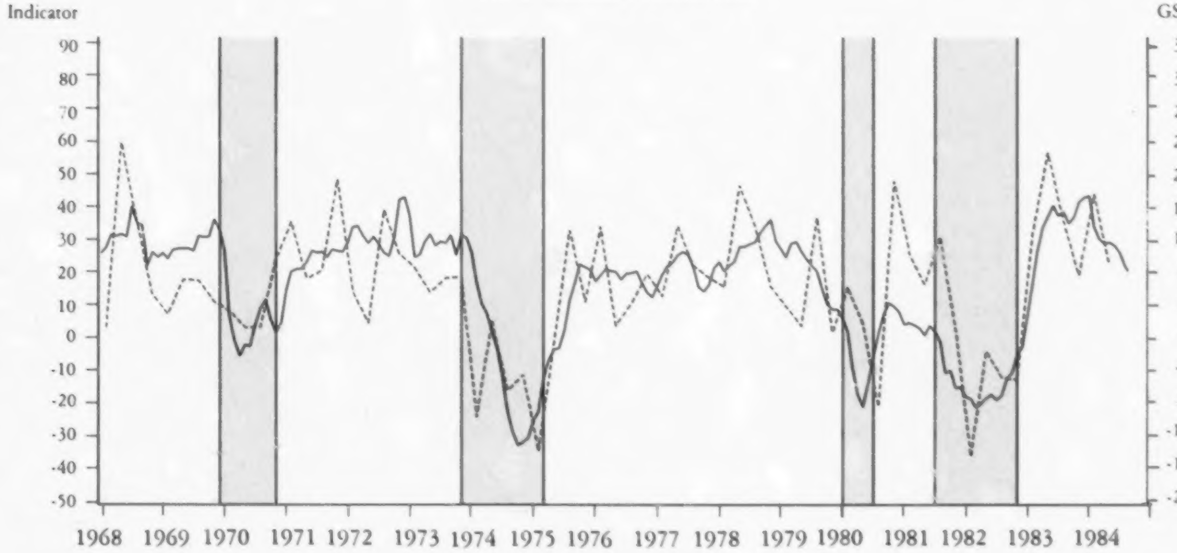
Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

FIGURE I (Cont.)
COMPARISON OF THE PURCHASING SURVEY INDICATORS
AND THE ARIZONA GROSS STATE PRODUCT (GSP)*

PURCHASED MATERIALS INVENTORY LEVEL



NEW ORDERS RECEIVED

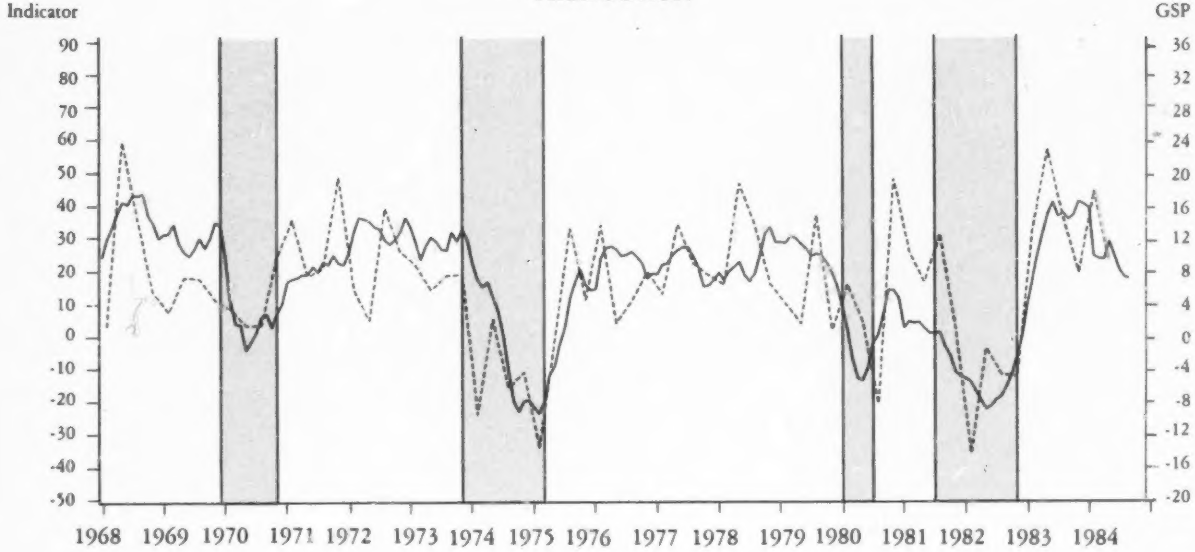


*The purchasing survey indicators are seasonally-adjusted and are moving averages (refer to the solid line and to the left scale). The GSP data are the annualized quarterly percent changes (refer to the dashed line and to the right scale). National recessionary periods are shaded.

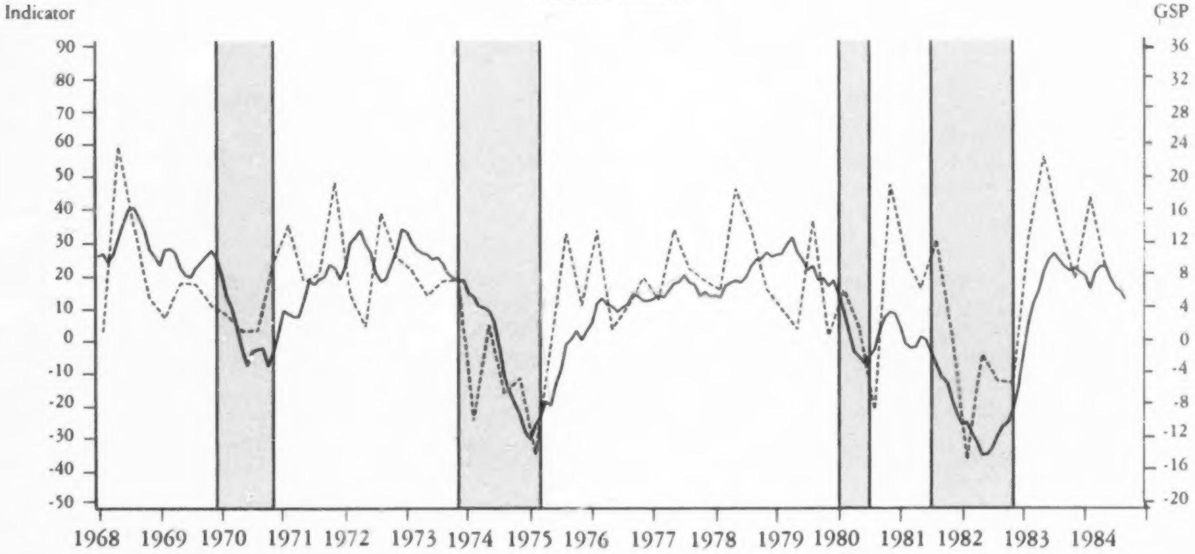
Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

FIGURE I (Cont.)
COMPARISON OF THE PURCHASING SURVEY INDICATORS
AND THE ARIZONA GROSS STATE PRODUCT (GSP)*

PRODUCTION



EMPLOYMENT



*The purchasing survey indicators are seasonally-adjusted and are moving averages (refer to the solid line and to the left scale). The GSP data are the annualized quarterly percent changes (refer to the dashed line and to the right scale). National recessionary periods are shaded.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

TABLE 1
PURCHASING SURVEY MEDIAN VALUES DURING LAST FOUR ECONOMIC CYCLES

	Key Indicators					
	Orders	*Production*	*Employment*	*Inventory*	*Delivery*	*Prices*
Monthly change index[1]:						
Peak value	41	38	32	24	54	77
Trough value	– 21	– 18	– 19	– 26	– 9	7
Number of months of lead time:						
Peak value to recession	13	13	12	9	7	2
Trough value to recovery	8	6	3	1	3	– 6[2]

[1] Seasonally adjusted, three-month moving average.

[2] A negative number of months indicates that the series lags, not leads, the economic cycle.

Source: Calculated by the authors from data in surveys of the purchasing management associations of Arizona and southern Arizona.

interpretation of an indicator requires not only the value itself but comparison of that value to its level in preceding months.

Since the primary goal of the indicators is to predict turning points in economic performance, their directional changes are of prime importance. However, every change in the direction of an indicator does not predict a change in the direction of the economy. Similar to the national Index of Leading Economic Indicators, in which three successive monthly declines are necessary before most analysts would predict a recession, a decision rule must be applied to the Arizona survey indicators before predicting an economic turning point. Failure to apply such a decision rule results in "false signals," such as predicting a recession that will never occur.

The Decision Rule

The following decision rule, if applied to each of the six indicators, would have resulted in only one false signal during the last 16 years (inventory level in the late 1970s falsely signaled a recession): (1) a change in direction must last at least five months to predict a recession and at least three months to predict a recovery, and (2) the change in value must be at least 14 points. Additional verification of a true signal is available if the peak or trough value is near its historic median (see Table 1).

Even with the requirement of a five-month change of direction, this interpretation of the survey indicators provides an unusually early warning of a recession. For example, during the expansion of the late 1970s, the new orders indicator clearly predicted a recession six months prior to its beginning; the delivery time indicator followed three months later. Because of the near absence of false signals, only two of the six indicators need to meet the requirements of the decision rule for a turning point in the economy to be forecast with confidence; one indicator alone is generally sufficient.

INTERPRETING THE CURRENT INDICATORS

Each of the six indicators declined to its most recent trough value during the 1982 recession. Each then rose steadily, attaining a value within five points of its historic median peak during 1983 or early 1984, as illustrated in Table 2. (The prices indicator did not come within 30 points of its historic peak, probably due to the relative lack of inflationary pressure during the current economic expansion). Currently, however, each indicator is declining at a slow but steady pace, clearly predicting a slowdown that should begin during the latter half of 1984. The first hint of the slowdown was signaled in May by the production indicator.

While a slowdown in both the national and Arizona economies is clearly indicated, it may not be severe enough to cause a decline in economic activity, especially in Arizona. Instead, a "growth recession" may result: a period of at least two successive quarters of real growth, at a rate less than the long-term trend (3 percent for Gross National Product and 5.5 percent for

TABLE 2
PURCHASING SURVEY — CURRENT ECONOMIC CYCLE

	Key Indicators					
	Orders	*Production*	*Employment*	*Inventory*	*Delivery*	*Prices*
Peak month	1/84	11/83	7/83	8/83	2/84	3/84
Peak value of monthly change index[1]	43	40	26	21	52	46
Number of months of decline, to date[2]	8	10	14	13	7	6
Magnitude of decline, to date	24	23	14	14	31	28

[1] Seasonally adjusted three-month moving average.
[2] Includes results of the October 1984 survey.

Source: Calculated by the authors from data in surveys of the purchasing management associations of Arizona and southern Arizona.

Arizona Gross State Product). Such a growth recession occurred in Arizona during 1970, which was predicted by the survey indicators and which coincided with a national recession.

The third quarter, 1984, Gross National Product seems to verify the slowdown scenario. Percentage real growth at an annual rate was less than 2 percent, a sharp decline from the second quarter's 7.1 percent increase. While a true recession may yet develop, this seems unlikely due to the absence at this time of other classic recessionary conditions.

The early warning capability of the survey of purchasing managers was demonstrated again recently. Strictly adhering to the decision rule, using July data released in early August, 1984, two key Arizona indicators, production and new orders received, clearly signaled a slowdown. On the national level, only the first hint of such a slowdown was revealed in early August: A decline in the June Index of Leading Economic Indicators was announced by the Department of Commerce at the end of July. It was not until the end of October, with the downward revision of the August Index of Leading Economic Indicators, that three successive monthly declines were measured.

CONCLUSION

Large, computer-based, statistical models of the economy have come under criticism recently, primarily because most of them did not predict the strength of the current economic recovery. However, the majority of people in the business community may not be interested in the professional squabbles among forecasters that appear on the pages of the *Wall Street Journal* over the projected rate of real economic growth. Rather, businesspeople need to know whether the coming year will be stronger or weaker than the current year, whether it is sensible to accumulate or pare inventories, and which pricing strategies will be most beneficial.

Based on this analysis of the purchasing management survey, it appears the answers to these latter questions are "imbedded" in the market and reflected in the professional behavior and technical information possessed by the respondents to the survey. Since the survey responses reflect the market activity of a very large number of participants (producers of final goods, suppliers of materials, purchasers of labor services, and managers of operations), they usually provide more reliable insight into economic activity than projections from individual forecasters or statistical models that cannot incorporate all of the available "real time" market data.

This analysis shows that the monthly survey of Arizona purchasing managers is a timely and reliable leading indicator. Thus, current declines in certain key components are economically important and bear close observation during the next few months.

Forecasting Arizona Economic Activity

LUKE KOONS
TOM R. REX

Rapid growth in the number of commercial economic forecasting firms during the past decade serves as testament to the growing demand from the business community for economic forecasts. Planning activities and investment decisions are increasingly dependent on reliable projections of economic variables such as prices, income, wages, and sales.

Although most commercial economic forecasters focus on the national economy, national forecasts do not adequately project the health of a state's economy. Due to a variety of factors, such as industrial mix, population, and demographics, a state's economic performance will deviate from that of the nation as a whole. This is especially true in Arizona, where growth rates of gross state product, employment, and income fluctuate over the course of the business cycle to a greater degree than their national counterparts.

In order to facilitate business and government planning, the Bureau of Business and Economic Research (BBER) in the College of Business, Arizona State University, will begin to publish Arizona economic forecasts on a quarterly basis. This article introduces the BBER econometric forecasting model and presents the 1985 Arizona economic forecast.

Solid growth during the last three quarters of 1985 is the forecast of the Bureau of Business and Economic Research in the College of Business at ASU. First quarter, 1985, will mark the end of a growth recession that seems to have begun during the latter half of 1984. This article describes the Bureau's new econometric forecasting model and presents 1985 forecasts for selected measures of the Arizona economy such as personal income, unemployment, inflation, and interest rates.

Luke Koons is a Research Analyst in the Bureau, and Tom Rex is the Bureau's Manager of Research Support.

FORECASTING METHODOLOGY

While the performance of the Arizona economy deviates enough from that of the national economy to make a separate Arizona economic forecast valuable, the deviation is not so great that the two economies should be considered dissimilar. In particular, the timing of the two economic cycles is nearly identical. Similarities in performance also exist as a result of the Arizona economy's dependence on the national economy: it is a component of the larger economy. For example, many Arizona industries compete in a national, rather than a regional or local market, making economic activity in these industries a function of national economic fluctuations.

Because of the interdependent relationship between the state and national economies, forecasts for important macroeconomic variables on the national level are significant inputs into the process of forecasting state level variables. The national forecasts are provided by

Data Resources, Inc. (DRI), a Massachusetts-based company that provides a full range of econometric services. Given these forecasts, the BBER forecasting model controls for economic and institutional characteristics that are unique to Arizona. This requires understanding the structure of the Arizona economy and its interrelationship with the structure of the U.S. economy.

Specifying, Estimating, and Validating the Model

There are three distinct phases in the development of an econometric forecasting model: specification, estimation and validation. Specification involves the delineation of behavioral relationships in the various sectors of the economy. A relationship, or specification, must be expressed for every variable that is to be forecast. For example, if the particular variable of interest is residential building permits, a specification might include U.S. residential building permits, a mortgage interest rate, Arizona real personal income, and changes in the growth of Arizona's population. Economic theory is employed to lay out the initial specification for each of the variables.

The estimation process, referred to as "estimating the model," entails fitting the specified equations to historical data, using a statistical technique such as regression analysis. Estimation permits one to determine which of the explanatory variables are statistically significant in explaining the variation in the dependent variable, e.g., residential building permits. Since the economy is a dynamic system, it is necessary to periodically re-estimate the equations to ensure that the relationships still hold. For example, it may become necessary to switch from a fixed-rate mortgage to a variable-rate mortgage in the residential building permits equation.

The final phase of the forecasting process is to validate the accuracy of the forecasts produced by the model. This is done by estimating the model over an earlier time period, then forecasting from the end of this period to the current date. These forecasts are compared to the actual values. By employing actual values for the national variables during this forecasting period, one can pinpoint errors that are solely attributable to the state forecasting model. In an actual forecasting environment, however, errors are attributable to both the state forecasting model and the forecasts for the national variables. This latter source of error cannot be directly controlled by the regional forecaster.

The Arizona Forecasting Model

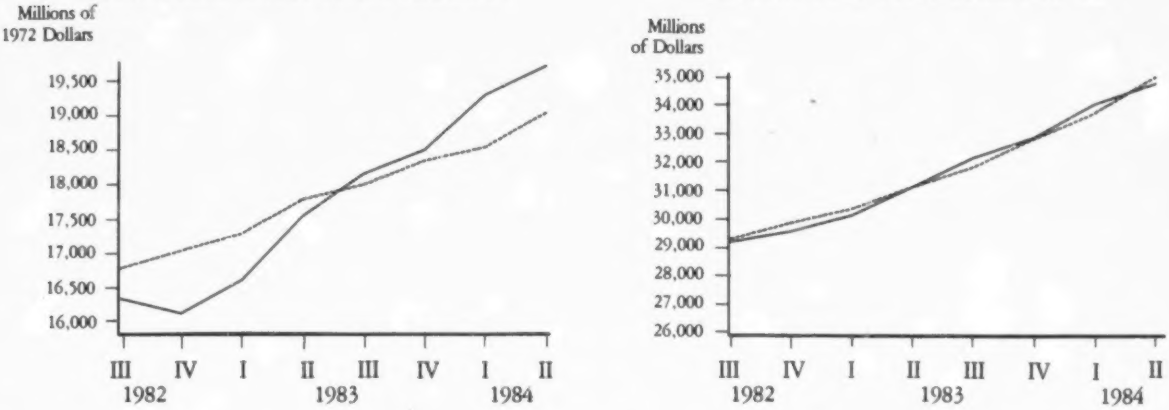
The BBER Arizona econometric forecasting model consists of 120 equations categorized into one of five major blocks: employment, wages, income, population, and prices. National variables forecast by DRI impact all blocks of the model. Interaction also occurs between blocks. For example, changes in Arizona employment impact Arizona income; income, in turn, impacts back on employment. Thus, the model is simultaneous in that many of the dependent variables affect each other. In short, the national variables account for the influence of national economic activity on the Arizona economy, while the interdependent relationships among the dependent variables control for state-level deviations from the national economy.

In order to validate the BBER econometric model, it was estimated from the first quarter, 1970, through the second quarter, 1982. Next, the model was simulated to provide forecasts from the third quarter, 1982, through the second quarter, 1984. These forecast values were then compared to the actual values of the variables during this latter time period, permitting an analysis of the model's performance in predicting the recovery from the 1981-82 recession. (Based on National Bureau of Economic Research reports, the national economy began recovery in November 1982.)

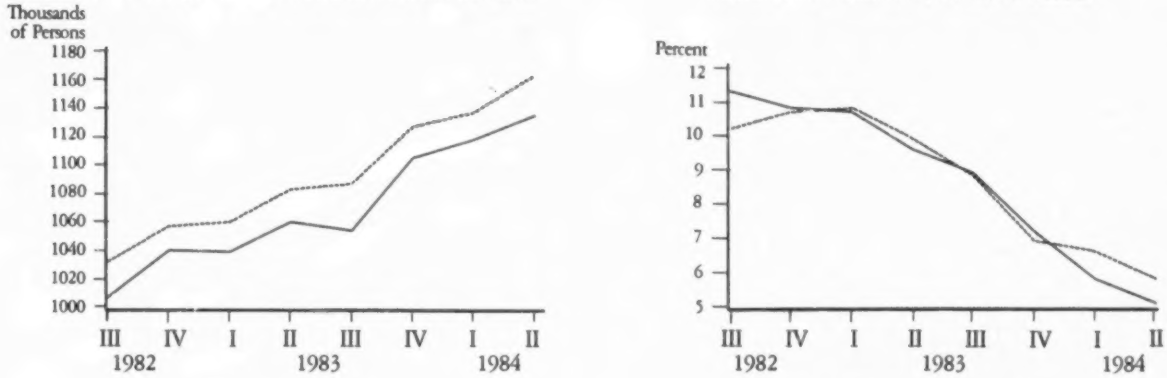
Comparisons of the actual and forecast values for the major indicators of the Arizona economy appear in Figure I. The average percent error of the forecast for each indicator is presented in Table 1. The model performed reasonably well in forecasting the economic recovery from the 1981-82 recession, as evidenced by the predicted increase in personal income and gross state product as well as by the precipitous decline in the unemployment rate. As of the second quarter, 1984, the model's forecast for Arizona personal income exceeded the actual amount, approximately $34.8 billion, by $231 million — an error of 0.66 percent. The forecasts for personal income were even more accurate in the second and fourth quarters of 1983.

The model also performed well in projecting real Arizona Gross State Product. The forecast error in this case averaged 0.36 percent. The forecast of total wage and salary employment and of the Metropolitan Phoenix Consumer Price Index (CPI) is less accurate, however. Although the model correctly predicted the changes in growth for these two variables, it over-predicted the actual level in each case. Nevertheless, the forecast error over the simulation period was a mere 2.2 percent for each variable.

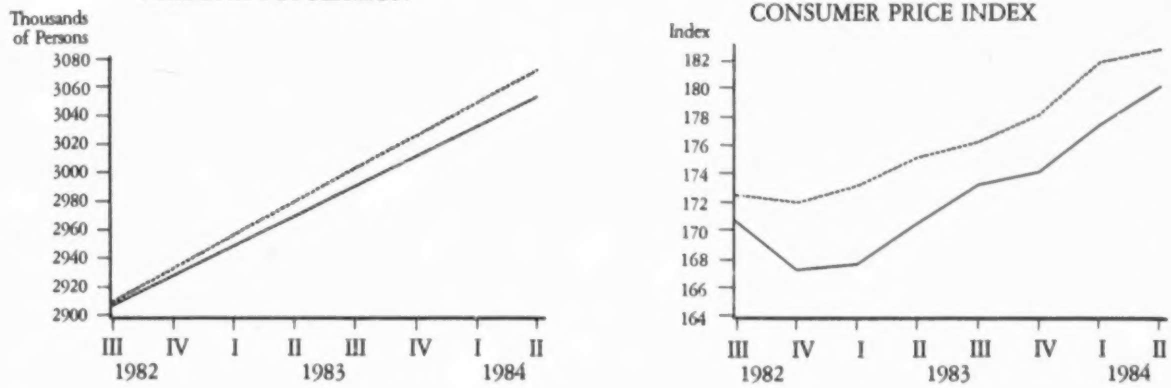
FIGURE I
COMPARISON OF ACTUAL AND FITTED VALUES OF SELECTED ECONOMIC INDICATORS*


ARIZONA REAL GROSS STATE PRODUCT

ARIZONA TOTAL PERSONAL INCOME


ARIZONA WAGE AND SALARY EMPLOYMENT

ARIZONA UNEMPLOYMENT RATE


ARIZONA POPULATION

METROPOLITAN PHOENIX CONSUMER PRICE INDEX

*The actual value of the economic indicator is shown as a solid line. The fitted (predicted) value of that indicator is shown as a dashed line.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
COMPARISON OF ARIZONA ACTUAL AND FITTED VALUES IN FORECASTING RECOVERY FROM 1981-82 RECESSION

	Average from Third Quarter, 1982 Through Second Quarter, 1984		
	Actual	*Forecast*	*Percent Error*
Gross State Product (Millions of 1972 dollars)	17,781	17,846	0.37
Personal Income (Millions of current dollars)	31,734	31,752	0.06
Unemployment Rate (Percent)	8.7	8.7	0.00
Wage and Salary Employment (Thousands of persons)	1,069.7	1,093.3	2.20
Metropolitan Phoenix Consumer Price Index (1977 = 100)	172.6	176.4	2.20
Population (Thousands of persons)	2,978.9	2,991.1	0.40

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

ARIZONA ECONOMIC FORECAST FOR 1985

After validating the model, it was estimated over the period from the first quarter, 1970, through the third quarter, 1984. However, third quarter, 1984, personal income data were not yet available from the U.S. Department of Commerce, Bureau of Economic Analysis. Thus, the previously forecast values of the income components were employed for the third quarter, pending receipt of the actual data in January 1985.

The forecasting period runs through the fourth quarter, 1985. Forecasts for selected measures of Arizona's economy appear in Table 2, and national forecasts made by DRI are provided for comparative purposes. The DRI forecast assumes a growth recession beginning in the second quarter, 1985, with growth less than the long-term trend of 3 percent continuing through the remainder of the year. In contrast, the BBER forecast assumes continued strong growth throughout 1985. It reflects third quarter, 1984, GNP growth and leading economic indicators on both the state and national levels that suggest a growth recession is occurring during the latter half of 1984. Not likely to

TABLE 2
ARIZONA AND UNITED STATES ECONOMIC FORECASTS

	Annual Average			
	1984		*1985*	
	Arizona	*United States*	*Arizona*	*United States*
Gross Product				
Millions of 1972 dollars	19,732	1,642,800	21,212	1,687,300
Percent change	11.5	7.0	7.5	2.7
Personal Income				
Millions of current dollars	35,314	3,009,500	39,117	3,213,000
Percent change	11.9	9.7	10.8	6.8
Unemployment Rate (Percent)	5.0	7.4	4.7	7.2
Wage and Salary Employment				
Thousands of persons	1,146	94,095	1,222	96,597
Percent change	7.6	4.4	6.7	2.7
Consumer Price Index (Percent change)	6.0	4.3	5.7	3.9
Population				
Thousands of persons	3,082	236,425	3,211	238,650
Percent change	4.0	0.9	4.2	1.0

Source: National forecasts by Data Resources, Inc.; Arizona forecasts by Bureau of Business and Economic Research, College of Business, Arizona State University.

last beyond the first quarter, 1985, this growth recession will be followed during the remainder of 1985 by growth that is solid but not as spectacular as that during 1984.

Gross Product, Personal Income

The varying assumptions noted above explain the wide difference between Arizona and the nation in the 1985 projections (see Table 2). Arizona GSP growth at 7.5 percent is well above the projected long-term trend of 5.5 percent, while GNP growth is forecast by DRI to fall below its long-term trend. Similarly, growth in personal income is expected to remain much stronger in Arizona than it will be nationally, although the 1985 growth rates for both personal income and gross product will be slower in 1984, both nationally and locally.

Unemployment

The unemployment rate in Arizona declined during 1984 from 6.3 percent in January to a record 4.0 percent in September. The annual average for 1984 is estimated to be 5.0 percent. During 1985, the unemployment rate probably will rise slightly from its current low levels, but the annual average is expected to be less than 5.0 percent.

Population Growth

Following the pattern of previous economic cycles, population growth probably will peak during 1985, exceeding the rapid growth of 1984. The greatest migration to Arizona usually occurs far into an economic expansion.

Inflation Rate

The inflation rate in Arizona (measured by the Metropolitan Phoenix Consumer Price Index) is also expected to follow the pattern of previous economic cycles, in which it exceeds the national average during expansions but is lower during recessions and recoveries. A slight decline in the inflation rate is expected both in Arizona and in the nation during 1985. While a decline is contrary to what would be expected at this stage of the business cycle, the usual signs of imminent price increases, such as rapidly increasing wages and high capacity utilization, are not currently present. In addition, recent declines in the Producer Price Index, which usually leads the Consumer Price Index, indicate that an increase in the inflation rate for consumers is still months away.

Interest Rates

Interest rates are not anticipated to change much during 1985, although analysts disagree as to their direction and the amount of change. The current economic slowdown is creating downward pressure on interest rates, but an increase in economic growth in 1985 would likely cause rates to again rise slightly.

CONCLUSION

The outlook for the Arizona economy during 1985 is one of continued strong economic growth, with economic activity on the state level outpacing national activity.

The major danger to this rather optimistic 1985 forecast for Arizona is that the current slowdown in economic growth is only a prelude to a 1985 recession. During prior economic cycles, such a pattern has occurred, most recently in 1979. In that year, growth was below trend, both in Arizona and nationally, in three of four quarters preceding the 1980 recession. However, in contrast to 1979, the classical precursors of a recession are absent at this time. For example, capacity utilization is still low, and price pressures are minimal.

The ASU Bureau of Business and Economic Research will continue to enhance the econometric model described in this article and will issue Arizona economic forecasts on a quarterly basis.

Forecasting Residential Construction Activity

LEE R. McPHETERS
STEFAN C. NORRBIN

Two alternative 1985 forecasts for the metropolitan Phoenix residential real estate market are presented in this article. The first results from the residential housing equations of an econometric model recently developed by the Bureau of Business and Economic Research in the College of Business at ASU. A second "judgmental" forecast reflects the current, subjective outlooks of a panel of Bureau economists and real estate analysts.

Lee R. McPheters is Bureau Director and Professor of Economics in the ASU College of Business. Stefan C. Norrbin is a graduate research assistant for the Arizona Real Estate Institute. The authors gratefully acknowledge funding support for the econometric modelling project provided by the Real Estate Economic Impact Study Group.

The construction industry is a key component of the metropolitan Phoenix economy. It is one of the more vigorous participants in economic expansions, while also being especially sensitive to the forces of recession. Construction activity often turns down in advance of other components of the economy, making the industry a closely watched leading indicator of business cycle fluctuations. Many analysts believe that weakness in the residential market, measured by building permits issued for single family dwellings and multifamily apartment units, is a particularly important signal of general economic slowdown.

Construction employment usually rises sharply during economic expansions as residential, commercial, and industrial construction increase to meet the needs of new residents and growing businesses. During the recent economic recovery, construction employment in Maricopa County jumped from 46,400 jobs in January, 1983, to 62,900 jobs in August, 1984, an increase of 35.6 percent. Recently, however, this growth has slowed. Between May and August, 1984, construction employment increased by only 100 jobs, compared to a gain of 3,800 jobs between May and August, 1983.

Because of the importance of the construction industry to the metropolitan Phoenix economy, researchers at the Arizona Real Estate Institute and the Bureau of Business and Economic Research, ASU College of Business, have compiled and analyzed data on Maricopa County residential, industrial, and commercial building permits since 1954. During 1984, the Bureau has developed an econometric model of the metropolitan Phoenix economy to further improve understanding of the relationship between its major components, including the construction industry. This article discusses the model's residential housing equations and provides 1985 forecasts of single family and multifamily building activity in metropolitan Phoenix.

MODELLING RESIDENTIAL HOUSING

The metropolitan Phoenix model is based on 58 equations that describe the local economy. A "block model" similar in many respects to the larger model of Arizona discussed on page 11 of this issue, it is based on quarterly data from 1970 through 1983 and is estimated using regression analysis. The influence of national variables on the local economy is estimated from national forecasts by Data Resources, Inc., a Massachusetts-based forecasting firm.

In brief, national and Arizona variables influence the model's estimates of Maricopa County employment. Employment then determines personal income, which is combined with data on mortgage rates, housing prices, seasonal factors, and other variables to form the behavioral equations that explain residential housing permits.

Those variables having the strongest influence on single and multifamily building permits are shown in Table 1. The plus (+) and minus (−) signs next to each variable indicate its statistical effect on building permits. For example, as personal income in the Phoenix area has risen (due to increases in population, employment, and wages), the number of single family permits has historically increased.

The payment/income ratio is a constructed variable that incorporates the key aspects of the home buying decision. The numerator for any quarter is the required monthly payment on a median-priced new home when a 10 percent down payment is made on a 30-year mortgage at the prevailing interest rate. The denominator is the average personal income in metropolitan Phoenix for the given period. Increases in home prices or mortgage rates will raise the ratio, while increases in income (all other factors equal) will reduce the ratio. The ratio may be thought of as an inverse measure of affordability: An increase in the ratio indicates a decrease in the affordability of single family housing. Thus, increases in the ratio are associated with declines in single family building permits.

The multifamily-shift parameter is an explanatory variable in each equation for single family and multifamily housing permits. Another constructed variable, it captures the effect of an abrupt change in the number of multifamily building permits relative to single family permits during the mid-1970s. The variable is calculated as a simple percentage: the ratio of multifamily permits to total residential permits. The values of this variable are shown in Figure I. Between 1970 and 1974, multifamily permits accounted for approximately 40 percent of residential building permits. In 1975, the multifamily share plummeted to less than 10 percent of permits, then slowly rose over the remainder of the decade. The decline in the ratio, followed by a gradual increase in its value, allows the forecasting model to incorporate a characteristic of the multifamily permit data that otherwise would be unaccounted for.

TABLE 1
EXPLANATORY VARIABLES IN RESIDENTIAL BUILDING PERMIT EQUATIONS
(By Housing Type)

Single Family	*Multifamily*
Personal Income (+)	Personal Income (+)
Payment/Income Ratio[1] (−)	Prime Interest Rate (−)
Multifamily-shift Parameter[2] (−)	Multifamily-shift Parameter (+)

[1] The payment/income ratio is the monthly payment on a 30-year mortgage at the prevailing interest rate, with a 10 percent down payment on a median priced house, expressed as a percentage of average personal income.

[2] The multifamily-shift parameter is the ratio of multifamily permits to all residential permits.

Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

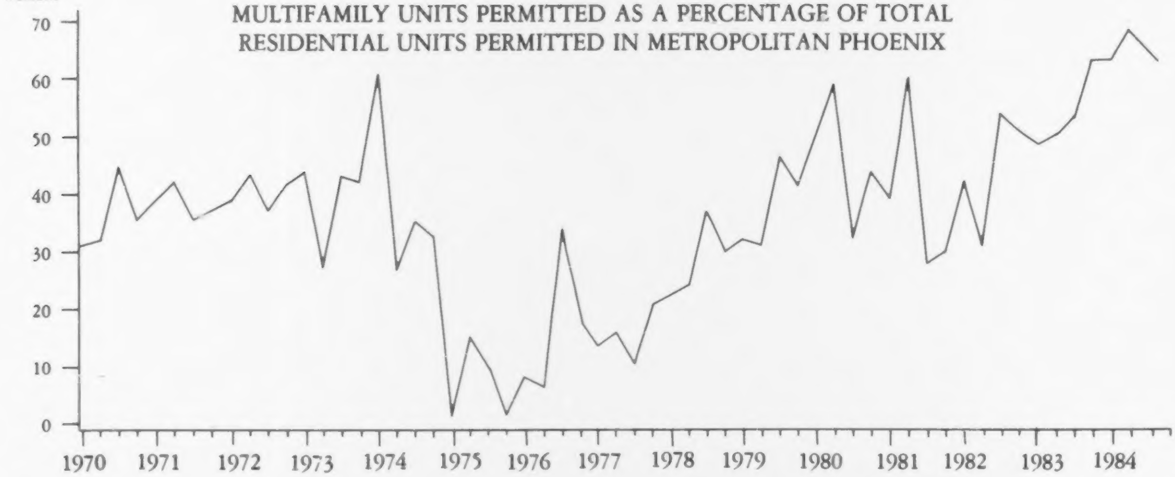
The variables listed in Table 1 explain 80 percent of the variation in single family permits and 67 percent of the variation in multifamily permits during the 1970-83 period. A visual impression of the model's ability to explain residential building permits is provided in Figures II and III. In each figure, the solid line represents the actual number of permits, while the dotted line indicates the number predicted by the equations.

FORECASTS FOR 1985

Due to their volatility, residential building permits are particularly difficult to forecast. For example, the variation in multifamily permits between the third quarter, 1981, and the third quarter, 1984, is 1,000 percent (from a low of 800 in 1981 to slightly more than 8,000 in the third quarter, 1984).

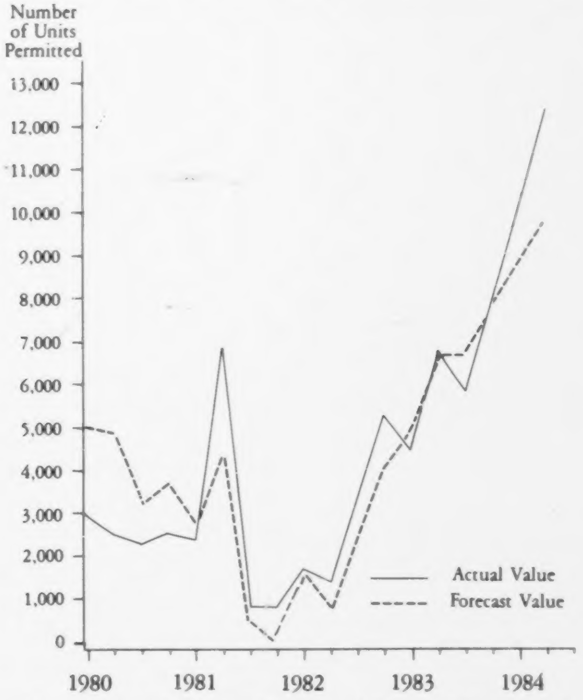
One source of difficulty lies in the inability of any statistical model to incorporate new information on changes in human behavior. Models assume that past relationships will continue to hold in the future. Of course, changes in factors that are excluded from the set of explanatory variables may have an effect on the performance of the housing equations. For example, a reduction in the rate of household formation due to postponement of marriage would reduce housing demand; the model, however, would not "know" about

FIGURE I
MULTIFAMILY UNITS PERMITTED AS A PERCENTAGE OF TOTAL RESIDENTIAL UNITS PERMITTED IN METROPOLITAN PHOENIX



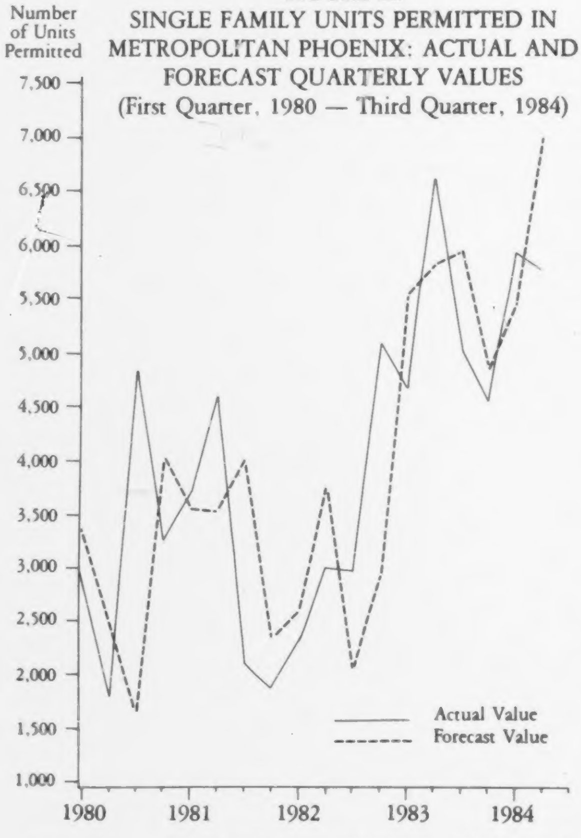
Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE II
MULTIFAMILY UNITS PERMITTED IN METROPOLITAN PHOENIX: ACTUAL AND FORECAST QUARTERLY VALUES
(First Quarter, 1980 — Third Quarter, 1984)



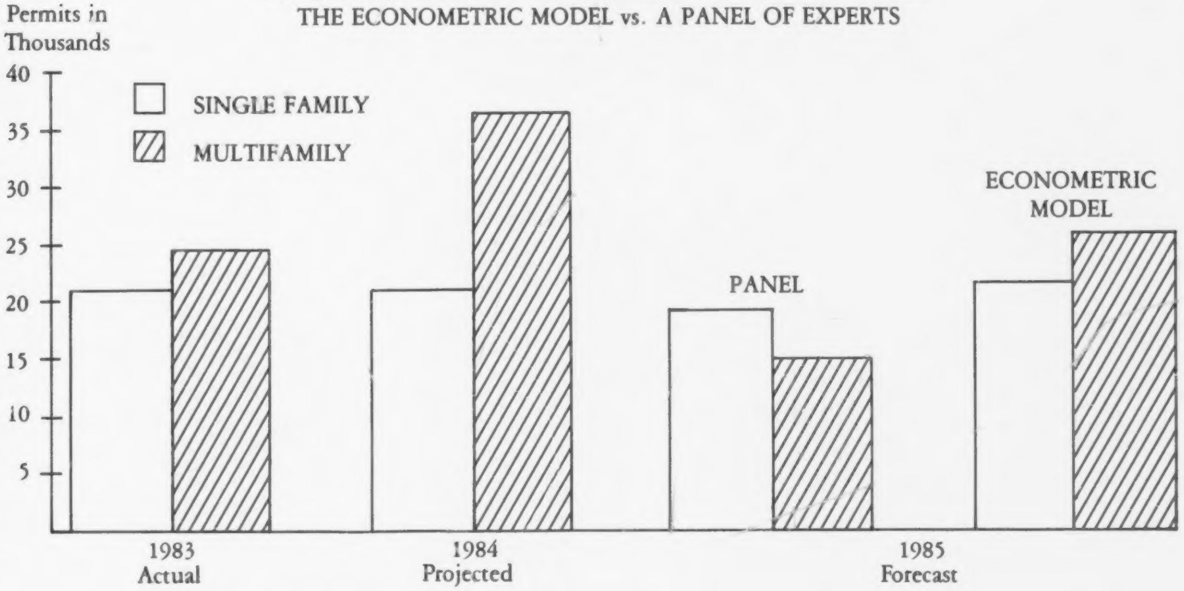
Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE III
SINGLE FAMILY UNITS PERMITTED IN METROPOLITAN PHOENIX: ACTUAL AND FORECAST QUARTERLY VALUES
(First Quarter, 1980 — Third Quarter, 1984)



Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE IV
FORECASTING SINGLE AND MULTIFAMILY PERMIT LEVELS:
THE ECONOMETRIC MODEL vs. A PANEL OF EXPERTS



Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

this change in basic human behavior. Similarly, alterations in tax laws, "bandwagon" effects leading to a speculative construction boom, or sudden changes in the expectations of builders, investors, and consumers are usually difficult to incorporate into a forecasting model.

For these reasons, forecasts that result from the building permit equations are best regarded as guides for those accumulating information from several diverse sources. The forecasts are accurate on average but in any given year may deviate significantly from the actual values. The fundamental assumption underlying the 1985 forecasts is that the national economy will experience real growth of 2.7 percent in Gross National Product during 1985, with no substantial change in interest rates occurring. The assumptions for the Arizona economy include real growth in Gross State Product of 7.5 percent during 1985 and an increase in wage and salary employment, moderating to 6.7 percent.

Under these assumptions, single family residential permits are forecast to reach a level of 21,500 units in metropolitan Phoenix during 1985. This forecast value is not substantially different from the actual number of permits recorded during the past two years. The forecast for 1985 represents an increase of 2 percent over the 21,000 single family units projected for 1984. The model predicts 25,500 multifamily permits will be issued during 1985. Although this is a 29 percent decline from the 36,000 units projected for 1984, it still represents a level of construction activity well above the average of the past decade.

The model's 1985 forecasts, especially the forecast for multifamily permits, illustrate the type of results often encountered when using a statistical model. Based on available data, the model has no reason not to expect multifamily activity to again be relatively strong during 1985. The projected 10,500 reduction in multifamily permits can be traced to the expected slowing in overall economic growth, which will be reflected in slower personal income growth in the multifamily equation.

However, additional information is available that would be difficult to incorporate into the econometric model. This information suggests that a much sharper decline in multifamily activity may occur during 1985. Until 1983, the record number of multifamily units permitted during any year was 15,400 in 1972. Between 1978 and 1982, an average of 12,100 units was permitted annually in the metropolitan Phoenix area. In

1983, the number of multifamily permits rose sharply to 24,700; the number grew to an unprecedented 36,000 in 1984. At the same time, construction of single family homes maintained a strong level. The result was two consecutive years of record numbers of new housing units permitted, with the 57,000 projected in 1984 far exceeding the earlier record of 46,000 in 1978.

Several factors combined to generate the multifamily housing boom. These include a 1981 tax law change, increased levels of investment capital made available through joint venture groups and syndicators, and a dynamic local economy. While the multifamily vacancy rate is not yet much higher than the historical average, thousands of the permitted units still have not been completed. Some observers expect that these units will not immediately be absorbed, if the record level of population growth necessary for their absorption does not occur. New household formation, which creates a smaller average household size, has contributed to occupancy of the units completed to date. However, a continued reduction in household size is not likely. The result may well be a rapidly rising vacancy rate during 1985 and a sharp curtailment of new multifamily activity.

Given this information, the Bureau of Business and Economic Research in the ASU College of Business has decided to undertake an experiment in which the econometric model, which is based on the stability of historical relationships, will be pitted against a panel of Bureau economists and real estate analysts. The panel members were asked to provide an alternative, judgmental forecast for 1985, based on their current subjective outlooks for residential building permits in metropolitan Phoenix. Both forecasts are presented in Figure IV.

Because the panel holds that the growth in multifamily construction activity has exceeded the rate of existing and projected population growth, it foresees a 58 percent decline during 1985 in the number of multifamily units permitted, to 15,000. The panel believes that limited demand for multifamily units will make them readily available at attractive rental levels. Hence, many households may continue to live in multifamily units instead of following the historical pattern of moving into single family homes. Their decision not to move, combined with the continuing problem of affordability, leads the panel to predict a 10 percent decline in single family permits during 1985, to 19,000 units.

This expected decline needs to be placed in historical perspective. The 15,000 multifamily units forecast by the panel would have been a near record prior to 1983. The forecast of 19,000 single family units exceeds the total reached in 7 of the 10 years preceding 1983. Thus, the panel expects that, despite a 40 percent decline in 1985 from the 1984 record for total housing units permitted, the residential housing market will remain quite strong, exceeding the level reached in 10 of the last 14 years.

CONCLUSION

Two alternative residential real estate forecasts for 1985 have been provided. The single family construction projections from the econometric model are not radically different from those by the panel of experts. However, the panel foresees a sharp drop in multifamily units, while the econometric model forecasts a more moderate decline. In this age of growing reliance on computers for planning and decision making, some traditionalists may find themselves cheering for the panel of experts' judgmental forecasts. Others, more technically oriented, may place their chips on the econometric model. During 1985, the Bureau will analyze the performance of the two forecasts and provide a mid-year report on the competition.

Arizona Construction Activity Third Quarter, 1984

JAY Q. BUTLER

Less home building and apartment development during the third quarter contributed to a slowing of Arizona construction activity from second quarter levels. Fewer permits, with a lower dollar value, were recorded. Activity still was above the level of third quarter, 1983, however. This slowdown is not generally viewed as a prelude to a decline but rather as a response to more stable consumer demand, slowing economic expansion, and higher interest rates.

A total of 23,862 permits, valued at $1.2 billion, were issued throughout Arizona, with the counties of Maricopa and Pima accounting for 88 percent of the total dollar value. This level of activity represents a 5 percent decrease in issued permits but a 33 percent increase in dollar value compared to third quarter, 1983. However, in contrast to the second quarter, 1984, total permit activity decreased 19 percent, while total dollar value declined a comparable 20 percent.

Table 1 reports on the key areas of construction activity. The quarterly building permit, new housing start, and real estate sales tables are at the end of this report.

SECTORAL ACTIVITY

Residential

Maricopa County. The single family sector recorded its third consecutive quarter of declining activity, with 4,626 permits, a 20 percent decrease from the second quarter figure. Year-to-date, 16,346 single family permits were issued, comparable to the 16,410 permits for the same period in 1983.

All of the major cities in the county reported decreased activity from the second quarter (see the New Housing Starts table). However, largely due to development in Sun City West, single family activity in unincorporated Maricopa County increased slightly.

Remodeling activity continued to be strong, with 1,334 permits valued at $11 million. Through the first three quarters of 1984, a total of 5,093 alteration and addition permits valued at $40 million were issued, in contrast to 5,671 permits worth $30 million for the same period of 1983.

The decline in building permits issued was comparable to the drop in new homes sold (2,541 homes during the second quarter to 2,396 homes during the third quarter). During the first three quarters of 1984, 7,489 homes were sold, compared to 6,874 sales for the first three quarters of 1983.

The metropolitan median sales value continued to increase, from $75,875 during the second quarter to $79,250 for the third quarter. Again, some of the price increase could be attributed to a gain in sales of more

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expensive homes. During the second quarter, 41 percent of the new homes were sold for more than $80,000, compared to 47 percent for the third quarter. During the first quarter, 1983, immediately after the recession, only 18 percent of the new homes were sold for more than $80,000.

In the resale market, the number of homes sold during the third quarter decreased to 9,369 from the 10,492 homes sold during the second quarter. The median sales price continued to increase, from $70,500 during the second quarter to $73,000. In contrast to the new home market, resale homes that were priced at more than $80,000 sold at a constant level of approximately 38 percent of all previously owned homes. More information on sales activity is reported on page 24 of this issue.

Rest of Arizona. Pima County recorded 885 single family permits during the third quarter, a decline of 22 percent from the second quarter's number. During the first three quarters of 1984, 3,243 permits were issued, in contrast to 3,553 permits for the same period of 1983. Third quarter mobile home activity decreased 16 percent from the second quarter figure to 506 permits.

Comparable to the decline in single family permits in Maricopa and Pima counties, a 17 percent decrease in single family activity in the other counties pushed permits below the second quarter level to 1,362 permits for the third quarter. Flagstaff was the only city to report significant improvement over the second quarter, moving from 89 permits to 150 permits. The most activity occurred in Lake Havasu City and Prescott; as well as in the unincorporated areas of Coconino, Gila, Navajo, Yavapai, and Yuma counties. Mobile home activity continued to decline, from 1,312 permits during the second quarter to 1,262 permits for the third quarter. Mohave County again led this sector, with 349 permits, followed by Yavapai, Pinal, Coconino, and Yuma.

Commercial

Maricopa County. The multifamily (apartment) sector has dominated the current housing market, with a year-to-date total of 28,497 permitted units, which exceeds the 1983 record (21,406 units permitted during the entire year). In Glendale, 156 permits for 1,787 units were issued during the third quarter, in response

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Third Quarter 1984, Second Quarter 1984, and Third Quarter 1983)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
MARICOPA COUNTY										
Third Quarter, 1984	4,626	312,765,251	517	176,245,746	96	118,924,753	207	29,689,100	183	78,747,547
Second Quarter, 1984	5,783	383,006,339	487	338,600,771	112	78,626,521	220	54,795,378	134	52,279,204
Third Quarter, 1983	5,070	283,202,525	403	115,003,638	91	49,392,803	173	31,923,716	135	24,729,681
PIMA COUNTY										
Third Quarter, 1984	885	53,237,603	63	34,778,291	22	10,040,262	12	2,841,930	26	6,579,358
Second Quarter, 1984	1,134	65,622,789	138	60,050,408	26	13,297,945	23	2,832,202	33	11,910,507
Third Quarter, 1983	1,110	62,072,491	27	48,243,033	16	14,183,614	16	5,426,240	5	1,303,900
REST OF ARIZONA										
Third Quarter, 1984	1,362	63,643,115	29	7,001,471	50	4,414,228	66	7,864,426	27	4,443,907
Second Quarter, 1984	1,634	75,909,428	44	10,916,989	48	5,114,991	76	8,591,830	37	13,716,414
Third Quarter, 1983	1,489	62,174,401	6	1,758,439	33	2,497,769	75	8,466,181	43	12,436,955
ARIZONA TOTAL										
Third Quarter, 1984	6,873	429,645,969	609	218,025,508	168	133,379,243	285	40,395,456	236	89,770,812
Second Quarter, 1984	8,551	524,538,556	669	409,568,168	186	97,039,457	319	66,219,410	204	77,906,125
Third Quarter, 1983	7,669	407,449,417	436	165,005,310	140	66,074,186	264	45,816,137	183	38,470,536

[a] Five or more housing units.
[b] Office, bank, medical and professional buildings.
[c] Shopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

to announced increases in development fees. Even with the record level of activity, the third quarter metropolitan vacancy rate followed the seasonal cycle by declining to 9 percent. However, this was the highest third quarter vacancy rate of the 1980s.

A total of 48,479 housing units were permitted year-to-date through the third quarter, which exceeds the previous record of 46,351 housing units during all of 1978. However, while the 1978 single family sector accounted for 30,479 permits, 67 percent of the total market, the 1984 single family sector has provided only 34 percent of the market.

Although the number of permits for office buildings declined from 112 during the second quarter to 96 for the third quarter, the dollar value jumped from $79 million to $119 million. This level of activity was well above that reported for third quarter, 1983: 91 permits worth $49 million. Office building activity was most evident in Mesa (11 permits valued at $4 million), Phoenix (15 permits at $91 million), and Scottsdale (23 permits at $17 million). In Phoenix, four permits, each valued at $11 million or more, were issued for buildings of at least 380,000 square feet.

After a strong second quarter in which 220 permits valued at $55 million were issued, retail sector activity declined to 207 permits worth $30 million during the third quarter. This level of activity is fairly comparable to that of a year ago. Areas of activity included Mesa (11 permits valued at $6 million), Phoenix (56 permits at $10 million), and Scottsdale (11 permits at $6 million).

Rest of Arizona. Activity in Pima County's apartment sector declined from 138 permits worth $60 million during the second quarter to 63 permits worth $35 million for the third quarter. The year-to-date permit figure through the third quarter, 1984, was 12,428 total housing units, slightly less than the 1979 record of 13,574 units for the entire year. However, only 30 percent of the authorized units during 1984 have been single family houses, in contrast to 70 percent during 1979. The office building sector continued a moderately high level of activity, with 22 permits worth $10 million, down slightly from both the second quarter, 1984, and third quarter, 1983, levels. The retail sector, with 12 permits valued at $2.8 million, continued to provide a stable level of activity (see Table 1).

As in the metropolitan counties, apartment sector activity in the remaining 13 counties decreased, from 44 permits valued at $11 million during the second quarter to 29 permits valued at $7 million during the third quarter. However, the level still was well above the 6 permits worth $2 million recorded during the third quarter, 1983. Areas of apartment development included Payson (4 permits for 63 units), Mohave Valley North (6 permits for 24 units), unincorporated Pinal County (6 permits for 128 units), Prescott (5 permits for 37 units), and Yuma (5 permits for 60 units). The office building sector declined slightly during the third quarter to 50 permits worth $4.4 million. Primary areas of activity included unincorporated Cochise County (1 permit at $1 million), Mohave Valley North (4 permits at $213,000), unincorporated Pinal County (6 permits at $1.3 million), Cottonwood (3 permits at $370,000), Prescott (2 permits at $390,000), unincorporated Yavapai County (7 permits at $575,000), and Yuma (1 permit at $400,000). The retail sector continued to decline, dropping from 76 permits worth $8.5 million during the second quarter to 66 permits worth $7.8 million during the third quarter.

Industrial

The industrial sector in Maricopa County recorded another strong increase in construction activity during the third quarter over the preceding quarter, moving from 134 permits valued at $52 million to 183 permits worth $79 million. This value was more than triple the third quarter, 1983, figure. Areas of industrial development activity during the third quarter included Chandler (3 permits at $10 million), Glendale (19 permits at $7 million), Phoenix (50 permits at $33 million), and Tempe (89 permits at $20 million). Again, most of the activity was for the construction of new industrial structures.

Although Pima County continued to record strong industrial activity, with 26 permits worth $7 million, the level was down from the second quarter (33 permits valued at $14 million). However, it was well above the activity level of third quarter, 1983 (5 permits worth $1 million). Industrial activity was divided between Tucson (12 permits valued at $2.8 million) and unincorporated Pima County (13 permits valued at $3.7 million).

Due to a limited industrial base, industrial sector activity in the other Arizona counties can be heavily influenced by a single project. During the second quarter, these counties issued 37 permits worth $13 million, but most of the dollar value was due to a single $10 million project in Casa Grande. Hence, the 27 permits worth $4.4 million that were issued during the third quarter represent comparable growth in the industrial base. Areas of industrial development activity included unincorporated Coconino County (2 permits at $2 million), the Kingman area (1 permit at $400,000), unincorporated Santa Cruz County (1 permit at $350,000), and unincorporated Yuma County (4 permits at $700,000).

LOOKING AHEAD

During the first three quarters of 1984, a total of 82,994 permits worth more than $4 billion were issued in Arizona. During all of 1983, 105,618 permits valued at $3.6 billion were issued. In Maricopa County, 49,348 permits worth $2.9 billion have been issued during 1984, compared with 63,567 permits worth $2.5 billion during 1983. This tremendous increase in construction has been propelled by very strong economic growth, especially in Maricopa County.

Unlike previous construction cycles, the single family sector has not led the expansion. Most of the development activity has been in the apartment and office building sectors and, recently, in the industrial sector. Growth in these sectors has resulted from the economic expansion and from innovations in financing and development. For example, the office building sector features several large building developments designed to serve the rapidly growing services industry.

Even though the single family sector appears not to be fully participating in current economic growth, appearances are deceiving due to the rapid growth of the other sectors. By the end of 1984, single family activity in Maricopa County is expected to be comparable to the 20,961 units permitted during 1983. Because the outlook is for continued economic expansion during 1985, the single family sector could post three consecutive years of stable activity, which is highly unusual for this sector.

During the third quarter, interest rates began to decline, which might provide growth stimulus to the single family sector. They are not expected to decline very far, however — especially on mortgages — and the downward trend probably will not last beyond early 1985.

The general expectation for 1985 is for slower, more sustainable economic growth. This outlook should be favorable for the construction industry. However, due to heavy commercial building during 1984, the markets for new office space and apartment units must remain strong. With these two exceptions, the construction outlook for 1985 is promising.

Metropolitan Phoenix Real Estate Sales Third Quarter, 1984

The number of homes sold in the metropolitan Phoenix area during the third quarter declined nearly 10 percent from the second quarter level, to less than 13,900 homes (see Table 1). Although resale units, which constitute more than three-fourths of all home sales, led the decline, sales of new, single family homes also dropped.

The third quarter sales level was 3 percent less than that of the third quarter, 1983, indicating that peak sales activity for the current economic cycle may have occurred during the second quarter. The interest rate rise during the second quarter is probably responsible for the third quarter decline in sales. With the general economy slowing late in 1984, a substantial decline in mortgage interest rates probably will be necessary to restimulate the real estate market.

The median sales price rose 3.0 percent during the third quarter, an increase larger than that of the three preceding quarters. The median price varied from $63,000 for resale townhouses and condominiums to $79,250 for new single family dwellings, with an overall median price of $72,575.

The median rate of housing appreciation in metropolitan Phoenix during the third quarter was 0.8 percent, the eighth consecutive quarter of 0.8 or 0.9 percent gains.

TABLE 1

	Single Family			*Townhouse / Condominium*			*Grand*
Third Quarter, 1984	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	*Total*
Median sales price	$73,000	$79,250	$75,000	$63,000	$63,075	$63,000	$72,575
Percent change from prior quarter	3.5	4.4	4.2	– 3.1	0.2	– 1.6	3.0
Percent change from same quarter, prior year	5.0	10.6	7.1	3.3	20.3	8.6	5.9
Number of sales	9,369	2,396	11,765	1,232	861	2,093	13,858
Percent change from prior quarter	– 10.7	– 5.7	– 9.7	– 18.3	8.2	– 9.2	– 9.6
Percent change from same quarter, prior year	– 3.1	– 8.3	– 4.2	– 10.0	34.7	4.3	– 3.0

Arizona Building Permits: Quarterly Report

THIRD QUARTER, 1984

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE COUNTY	69	1,147,150	3	65,000	0	0	12	90,436	84	1,302,586
Eagar	18	420,000	3	65,000	0	0	2	18,000	23	503,000
St. Johns	20	N/C	0	0	0	0	0	0	20	N/C
Springerville	09	N/C	0	0	0	0	0	0	9	N/C
Unincorporated	22	727,150	0	0	0	0	10	72,436	32	799,586
COCHISE COUNTY	267	5,188,271	23	3,528,661	0	0	304	1,331,140	594	10,048,072
Benson	8	68,600	1	28,000	0	0	3	5,200	12	101,800
Bisbee	16	128,000	2	219,000	0	0	0	0	18	347,000
Douglas	22	147,573	0	0	0	0	46	105,744	68	253,317
Huachuca City	19	70,228	1	0	0	0	3	166,170	23	349,618
Sierra Vista	45	1,130,580	6	733,196	0	0	197	527,229	248	2,391,005
Tombstone	15	16,845	2	9,245	0	0	18	182,440	35	208,530
Unincorporated	131	3,548,695	9	2,281,000	0	0	27	329,791	167	6,159,486
Willcox	11	77,750	2	145,000	0	0	10	14,566	23	237,316
COCONINO COUNTY	563	16,154,734	23	934,641	10	2,791,619	119	1,996,385	715	21,877,379
Flagstaff	231	9,560,614	20	737,400	5	596,000	58	1,132,454	314	12,026,468
Fredonia	6	2,900	0	0	0	0	5	21,050	11	23,950
Page	51	1,312,754	0	0	2	68,673	11	432,470	64	1,813,897
Unincorporated	263	5,113,546	2	192,641	2	2,084,946	30	399,673	297	7,790,806
Williams	12	164,920	1	4,600	1	42,000	15	10,738	29	222,258
GILA COUNTY	250	4,252,759	13	1,759,677	4	21,988	36	778,310	303	6,812,734
Globe	7	33,500	1	350,000	0	0	4	9,252	12	392,752
Hayden	2	1,250	0	0	0	0	2	1,150	4	2,400
Miami	3	1,900	0	0	0	0	2	2,300	5	4,200
Payson	101	995,646	5	1,258,677	4	21,988	10	401,808	120	2,678,119
Unincorporated	137	3,220,463	7	151,000	0	0	18	363,800	162	3,735,263
GRAHAM COUNTY	99	1,441,307	14	559,400	1	4,500	17	583,535	131	2,588,742
Pima	10	43,950	0	0	0	0	8	18,810	18	62,760
Safford	38	580,300	12	495,200	0	0	6	383,925	56	1,459,425
Thatcher	10	311,000	0	0	1	4,500	0	0	11	315,500
Unincorporated	41	506,057	2	64,200	0	0	3	180,800	46	751,057
GREENLEE COUNTY	4	13,750	0	0	0	0	0	0	4	13,750
Clifton	0	0	0	0	0	0	0	0	0	0
Duncan	2	10,000	0	0	0	0	0	0	2	10,000
Unincorporated	2	3,750	0	0	0	0	0	0	2	3,750
LA PAZ COUNTY	59	846,783	1	12,000	1	33,165	22	120,516	83	1,012,464
Parker	9	42,324	1	12,000	0	0	8	7,057	18	61,381
Unincorporated	50	804,459	0	0	1	33,165	14	113,459	65	951,083
MARICOPA COUNTY	6,517	328,853,190	1,232	394,028,138	183	78,747,547	6,065	113,856,464	13,997	915,485,339
Avondale	36	597,310	1	234,900	1	280,800	23	90,624	61	1,203,634
Buckeye	9	18,000	1	9,000	0	0	7	112,500	17	139,500
Chandler	722	37,923,434	35	10,437,158	3	9,865,431	946	19,288,803	1,706	77,514,826
El Mirage	7	129,368	1	31,000	0	0	4	2,700	12	163,068
Gila Bend	3	43,550	0	0	0	0	4	850	7	44,400
Gilbert	103	5,608,488	13	3,980,601	1	231,636	61	1,985,116	178	11,805,841
Glendale	344	16,627,496	195	49,287,465	19	7,043,708	262	9,605,369	820	82,564,038
Goodyear	3	4,800	1	135,000	1	198,000	27	198,228	32	536,028
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	614	35,473,885	157	61,075,144	4	713,993	674	21,688,529	1,449	118,951,551
Paradise Valley	74	4,450,908	0	0	0	0	81	808,974	155	5,259,882
Peoria	423	10,832,205	9	1,642,279	1	111,000	375	1,258,925	808	13,844,409
Phoenix	1,787	84,831,074	393	176,403,694	50	33,281,117	1,577	34,695,997	3,807	329,211,882
Scottsdale	492	56,803,822	126	52,951,082	6	4,034,862	431	14,019,271	1,055	127,809,037
Surprise	11	161,637	11	727,550	4	543,000	16	34,084	42	1,466,271
Tempe	292	17,741,400	125	11,427,500	89	20,216,000	165	4,260,100	671	53,645,000
Tolleson	0	0	1	1,668,985	1	475,000	0	0	2	2,143,985
Unincorporated	1,582	57,072,043	163	24,016,780	1	1,700,000	1,409	5,662,326	3,155	88,451,149
Wickenburg	11	409,000	0	0	2	53,000	1	2,000	14	464,000
Youngtown	4	124,770	0	0	0	0	2	142,068	6	266,838

Arizona Building Permits: Quarterly Report (continued)

THIRD QUARTER, 1984

	RESIDENTIAL*		COMMERCIAL		INDUSTRIAL		OTHER		TOTAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE COUNTY	761	14,706,483	57	54,526,688	1	400,000	572	2,189,301	1,391	22,748,472
Kingman City	59	976,424	6	1,844,937	0	0	7	25,067	72	2,846,428
Kingman Area	125	1,372,441	7	624,318	1	400,000	160	200,912	293	2,597,671
Lake Havasu City	122	5,688,492	6	328,178	0	0	41	186,385	169	6,303,055
Lake Havasu Area	10	139,986	1	56,252	0	0	9	22,400	20	218,638
Mohave Valley N.	192	3,413,771	32	2,335,193	0	0	219	1,179,787	443	6,928,751
Mohave Valley S.	113	1,577,101	1	48,600	0	0	60	222,500	174	1,848,201
Dolan Springs	27	340,960	0	0	0	0	23	40,448	50	381,408
Sacramento Valley	49	702,846	2	71,280	0	0	44	99,740	95	873,866
Mohave General	64	494,462	2	143,930	0	0	9	112,062	75	750,454
NAVAJO COUNTY	394	8,347,574	14	1,374,232	0	0	51	1,599,186	459	11,320,992
Holbrook	7	103,100	1	30,000	0	0	1	1,500	9	134,600
Show Low	61	1,284,071	3	544,640	0	0	19	933,657	83	2,762,368
Snowflake	20	N/C	0	0	0	0	0	0	20	N/C
Taylor	2	4,000	0	0	0	0	0	0	2	4,000
Unincorporated	285	6,551,603	8	784,632	0	0	22	407,529	315	7,743,764
Winslow	19	404,800	2	14,960	0	0	9	256,500	30	676,260
PIMA COUNTY	2,080	59,452,981	144	60,506,649	26	6,579,358	1,717	31,316,493	3,967	157,855,481
Marana	10	N/C	0	0	0	0	3	N/C	13	N/C
Oro Valley	18	1,342,800	0	0	0	0	9	70,102	27	1,412,902
South Tucson	3	16,120	1	614,880	1	77,520	11	24,884	16	733,404
Tucson	733	16,542,343	58	28,092,663	12	2,836,638	1,092	20,681,482	1,895	68,153,126
Unincorporated	1,316	41,551,718	85	31,799,106	13	36,652,200	602	10,540,025	2,016	87,556,049
PINAL COUNTY	326	3,840,157	25	3,355,989	3	30,000	215	1,950,878	569	9,177,024
Apache Junction	89	1,543,809	6	1,016,356	0	0	79	530,566	174	3,090,731
Casa Grande	28	663,556	5	242,933	1	10,000	29	532,901	63	1,449,390
Coolidge	21	40,200	0	0	0	0	2	19,000	23	59,200
Eloy	9	4,460	0	0	0	0	8	6,400	17	10,860
Florence	15	38,050	0	0	0	0	5	704	20	38,754
Kearny	0	0	0	0	0	0	0	0	0	0
Mammoth	0	0	0	0	0	0	1	22,000	1	22,000
Superior	4	36,356	0	0	0	0	2	1,000	6	37,356
Unincorporated	160	1,513,726	14	2,096,700	2	20,000	89	838,307	265	4,468,733
SANTA CRUZ COUNTY	34	1,388,698	0	0	1	350,000	10	355,003	45	2,093,701
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	3	44,000	0	0	0	0	2	159,193	5	203,193
Unincorporated	31	1,344,698	0	0	1	350,000	8	195,810	40	1,890,508
YAVAPAI COUNTY	726	21,050,543	42	6,887,212	2	134,400	329	4,880,732	1,099	32,952,887
Chino Valley	35	365,883	3	93,800	0	0	17	109,100	55	568,783
Clarkdale	11	367,028	0	0	0	0	11	166,296	22	533,324
Cottonwood	37	670,108	4	482,326	0	0	11	1,557,276	52	2,709,710
Jerome	10	3,000	0	0	0	0	1	N/C	11	3,000
Prescott	139	4,330,222	16	3,057,038	2	134,400	141	906,384	298	8,428,044
Prescott Valley	74	1,791,866	3	153,648	0	0	18	183,736	95	2,129,250
Unincorporated	420	13,522,436	16	3,100,400	0	0	130	1,957,940	566	18,580,776
YUMA COUNTY	291	9,317,598	26	4,607,396	4	678,235	100	3,281,573	421	17,884,802
Somerton	9	37,170	1	22,000	0	0	2	22,280	12	81,450
Unincorporated	214	7,617,552	16	2,158,635	4	678,235	42	671,354	276	11,125,776
Wellton	0	0	0	0	0	0	0	0	0	0
Yuma	68	1,662,876	9	2,426,761	0	0	56	2,587,939	133	6,677,576
Total, Maricopa Co., 3rd Qtr., 1984	6,517	328,853,190	1,232	394,028,138	183	78,747,547	6,065	113,856,464	13,997	915,485,339
Total, Maricopa Co., 3rd Qtr., 1983	7,484	300,253,553	923	217,313,365	135	24,729,681	6,311	63,177,684	14,853	605,474,283
Percent Change	−12	9	33	81	35	218	−3	80	−5	51
Total, Arizona, 3rd Qtr., 1984	12,440	476,001,978	1,617	483,071,683	236	89,770,812	9,569	164,329,952	23,862	1,213,174,425
Total, Arizona, 3rd Qtr., 1983	13,985	453,566,426	1,217	312,526,340	183	38,470,536	9,771	101,458,918	25,156	906,022,220
Percent Change	−11	4	32	54	28	133	−2	61	−5	33

*Includes Mobile Homes
N/R: No Report
N/C: Some communities do not collect dollar valuations.

Arizona New Housing Starts: Quarterly Report

THIRD QUARTER, 1984

	BUILDING PERMITS ISSUED					
	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
APACHE COUNTY	46	14	0	0	0	60
Eagar	10	1	0	0	0	11
St. Johns	10	10	0	0	0	20
Springerville	4	3	0	0	0	7
Unincorporated	22	0	0	0	0	22
COCHISE COUNTY	74	95	0	0	1	178
Benson	0	7	0	0	0	7
Bisbee	2	0	0	0	1	11
Douglas	0	0	0	0	0	0
Huachuca City	0	1	0	0	0	1
Sierra Vista	29	13	0	0	0	42
Tombstone	2	3	0	0	0	5
Unincorporated	40	70	0	0	0	110
Willcox	1	1	0	0	0	2
COCONINO COUNTY	265	118	0	2	0	389
Flagstaff	150	22	0	2	0	178
Fredonia	0	4	0	0	0	4
Page	15	17	0	0	0	32
Unincorporated	97	73	0	0	0	170
Williams	3	2	0	0	0	5
GILA COUNTY	77	66	0	0	4	206
Globe	1	0	0	0	0	1
Hayden	0	0	0	0	0	0
Miami	0	0	0	0	0	0
Payson	20	28	0	0	4	111
Unincorporated	56	38	0	0	0	94
GRAHAM COUNTY	23	33	0	1	0	60
Pima	0	5	0	0	0	5
Safford	12	2	0	1	0	18
Thatcher	6	4	0	0	0	10
Unincorporated	5	22	0	0	0	27
GREENLEF COUNTY	0	2	0	0	0	2
Clifton	0	0	0	0	0	0
Duncan	0	1	0	0	0	1
Unincorporated	0	1	0	0	0	1
LA PAZ COUNTY	3	33	0	0	0	36
Parker	1	0	0	0	0	1
Unincorporated	2	33	0	0	0	35
MARICOPA COUNTY	4,626	340	62	126	517	13,020
Avondale	15	16	0	0	0	31
Buckeye	1	7	0	0	0	8
Chandler	656	0	0	1	29	1,282
El Mirage	1	1	0	0	0	2
Gila Bend	2	0	0	0	0	2
Gilbert	89	0	2	0	13	257
Glendale	271	12	1	0	156	2,072
Goodyear	0	1	0	0	0	1
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	559	0	0	11	18	1,297
Paradise Valley	15	0	0	0	0	15
Peoria	349	0	0	0	0	349
Phoenix	1,065	36	57	57	215	4,488
Scottsdale	434	0	1	30	42	865
Surprise	1	8	0	2	0	17
Tempe	208	0	0	8	14	352
Tollesor	0	0	0	0	1	76
Unincorporated	948	258	0	17	29	1,891
Wickenburg	9	1	1	0	0	12
Youngtown	3	0	0	0	0	3

N/R: No Report.

	BUILDING PERMITS ISSUED					
	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total Housing Units*
MOHAVE COUNTY	180	349	16	9	7	630
Kingman City	24	16	1	0	0	42
Kingman Area	7	65	0	0	0	72
Lake Havasu City	83	5	15	3	1	139
Lake Havasu Area	1	6	0	0	0	7
Mohave Valley N.	38	91	0	6	6	177
Mohave Valley S.	10	78	0	0	0	88
Dolan Springs	4	14	0	0	0	18
Sacramento Valley	5	27	0	0	0	32
Mohave General	8	47	0	0	0	55
NAVAJO COUNTY	180	49	4	1	0	241
Holbrook	2	2	0	0	0	4
Show Low	15	22	4	0	0	45
Snowflake	9	0	0	0	0	9
Taylor	0	1	0	0	0	1
Unincorporated	148	20	0	1	0	172
Winslow	6	4	0	0	0	10
PIMA COUNTY	885	506	32	7	63	3,309
Marana	1	9	0	0	0	10
Oro Valley	14	0	0	0	0	14
South Tucson	0	0	0	0	0	0
Tucson	249	115	32	7	11	1,148
Unincorporated	621	382	0	0	52	2,137
PINAL COUNTY	67	191	0	4	6	402
Apache Junction	19	59	0	2	0	86
Casa Grande	10	6	0	0	0	16
Coolidge	0	10	0	0	0	10
Eloy	0	3	0	0	0	3
Florence	0	15	0	0	0	15
Kearny	0	0	0	0	0	0
Mammoth	0	0	0	0	0	0
Superior	1	0	0	0	0	1
Unincorporated	37	98	0	2	6	271
SANTA CRUZ COUNTY	27	2	0	0	0	29
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	1	2	0	0	0	3
Unincorporated	26	0	0	0	0	26
YAVAPAI COUNTY	304	196	10	9	6	614
Chino Valley	5	16	0	0	0	21
Clarkdale	3	3	0	0	0	6
Cottonwood	9	15	0	0	0	24
Jerome	0	0	0	0	0	0
Prescott	56	16	0	5	5	129
Prescott Valley	35	17	8	3	0	71
Unincorporated	196	129	2	1	1	363
YUMA COUNTY	116	114	2	2	5	302
Somerton	0	2	0	0	0	2
Unincorporated	96	98	0	0	0	194
Wellton	0	0	0	0	0	0
Yuma	20	14	2	2	5	106
Total, Maricopa Co., 3rd Qtr., 1984	4,626	340	62	126	517	13,020
Total, Maricopa Co., 3rd Qtr., 1983	5,070	453	123	168	403	11,315
Percent Change	−8	−24	−49	−25	28	15
Total, Arizona, 3rd Qtr., 1984	6,873	2,108	126	161	609	19,478
Total, Arizona, 3rd Qtr., 1983	7,669	2,185	172	208	436	18,320
Percent Change	−10	−3	−26	−22	39	6

A Survey of Arizona Business Conditions

HAROLD FEARON

SEPTEMBER

The economy continued its cooling-off process in September, according to data from the monthly business survey of the purchasing management associations of Arizona and southern Arizona. While all indicators of economic performance again were positive, pushing the expansion into its 20th month, the increases were modest, in line with the more subdued growth rate of the summer months. The inflation rate also continued to moderate.

The slower pace of economic growth will extend at least through the end of the year. However, the moderation from the fast-forward pace of the first half of 1984 is not likely to be a prelude to any major drop-off during the fourth quarter. The more orderly pace of economic expansion will keep the inflation rate under control.

Now beginning its 23rd year of monthly reporting on the condition of the Arizona economy, the purchasing business survey uses data gathered through a questionnaire sent at the close of each month to purchasing managers statewide. It asks them to indicate the direction of activity — higher, unchanged, or lower — on seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace. Their aggregate readings have accurately charted the course of the current economy over the past two decades and have provided data on turning points several weeks earlier than comparable government data.

Prices

Prices paid for major purchased items increased again in September but at the lowest rate since April 1983 (18 months ago). Thirty percent of the purchasing managers paid higher prices in September than in August; 10 percent enjoyed lower prices; while a very large 60 percent said prices were unchanged. Price increases have followed a decided slowing trend over the past three months, and inflation probably will remain in check over the balance of 1984 and into 1985.

Delivery Time

Delivery time on shipments from vendors stretched a bit further in September but at a slightly lower rate than in August and at the smallest rate since March 1983. This indicator began to show definite slowing last June, as firms no longer had a large backlog of unfilled orders. Longer vendor lead times were reported by 31 percent of the firms; 9 percent received faster deliveries.

Dr. Fearon is the National Association of Purchasing Management Professor in the College of Business, Arizona State University.

Inventory Levels

Inventory levels experienced a very slight up-tick, with the number of managers adding to stocks (32 percent) almost balanced by the number who reduced inventory (27 percent). Inventory has remained static for the past three months, and stock building no longer is adding fuel to the expansion.

New Orders

New orders went up again in September at a rate that has remained nearly the same during the past four months. This was the 21st consecutive month of new order growth, with 41 percent saying their firm booked more new business in September than in August, and only 20 percent reporting a shrinkage of their order books. While the expansion continued in September, the rate was down substantially from the hectic increases of January through May of this year.

Production

Production increased, in line with the more moderate new order growth. Thirty-five percent of the firms boosted output; 18 percent cut back. The September increase rate was about half as large as increases during each of the first six months of 1984.

Employment

Employment improved in September, for the 20th month in a row. The increase rate was slightly larger than in August but well under the earlier months of 1984. Twenty-nine percent of the firms added to their work force, compared to 13 percent that pared payrolls.

Purchases

Purchases of materials, supplies, and services by Arizona firms rose in September at a slightly greater rate than in August but well under the growth rates during the first half of 1984. Forty-five percent increased their purchase commitment rate, while 18 percent reduced their buying. The advances of this indicator have been moderate over the past four months.

TABLE 1
SEPTEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (September compared to August)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	30	60	10
Delivery time from vendors	31	60	9
Purchased materials inventory level	32	41	27
New orders received	41	39	20
Production	35	47	18
Employment	29	58	13
Purchases	45	37	18

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

OCTOBER

The Arizona economy continued to cool down in October. While all of the indicators of economic performance were positive for the 21st consecutive month, the aggregate upward thrust was slight. The rate of growth was at its lowest point since January 1983, the first month of recovery following the 1981-82 recession.

Again, there was good news on prices; only a marginal increase was recorded in October — the smallest since February 1983. We appear to be entering a period of relative price stability.

Moderate growth will occur between now and the end of the year. If interest rates drop during the next month, as now appears likely, an aggregate economic decline in November and/or December probably can be avoided. While almost all of the steam has gone out of the upswing, 1985 will start from a very high performance base.

Prices

Prices paid for major purchased items went up again in October but at the smallest increase rate of the past 20 months (since February 1983). Twenty-one percent of the purchasing managers paid higher prices in October than in September; 12 percent enjoyed lower prices; while a very large 67 percent said prices were unchanged. The price increases have moderated each month, beginning last July, and the October increase was less than half that of September. It appears that the Arizona economy will continue to enjoy a period of price stability extending well into 1985.

Delivery Time

Delivery time on shipments from vendors stretched again in October but at the lowest rate since March 1983 (19 months ago). Longer delivery times were reported by 27 percent of the purchasing managers, compared to 12 percent who received faster delivery service. The stretch-out has gotten smaller over each of the past three months, and it is well under those of the first half of 1984. Vendor backlogs no longer are building, and buyers now can expect reasonably prompt service on orders placed.

Inventory Levels

Inventory levels increased very slightly, with 31 percent of the firms adding to stocks, compared to 28 percent that cut inventory. Inventory has been almost stable during the past four months and is not adding impetus to growth. However, there also is no inventory overhang that could put the economic recovery in jeopardy.

New Orders

New orders were still positive, with 38 percent saying their firm booked more new business in October than in September, while 24 percent saw their order books contract. This was the smallest increase since January 1983; the increase rate has been declining steadily since May. This probably is the best single indicator of the loss of momentum experienced by the economy during the second half of 1984.

Production

Production improved again in October, at the same rate as in September, with 37 percent of the firms increasing output, compared to 20 percent that cut production. The production increases in August, September and October were lower than in any month since January 1983. Assuming that the new order rate will continue to moderate over the next several months, as it likely will, production increases will follow a downward path; they could even turn negative by the end of the year.

Employment

Employment went up again in October, for the 21st month in a row, but at approximately half the September increase rate and by the smallest amount since January 1983. Twenty-three percent of the firms added to their work force, while 14 percent pared payrolls. Thus, Arizona's employment picture remains bright, although further increases between now and the end of the year likely will be small.

Purchases

Purchases of materials, supplies and services by Arizona firms increased again, with 44 percent of the firms adding to their purchase commitments, while 25 percent cut back. The increase rate on this indicator has remained the same over each of the past three months; these were the smallest increase rates since this data series was begun in March 1983.

TABLE 2
OCTOBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (October compared to September)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	21	67	12
Delivery time from vendors......	27	61	12
Purchased materials inventory level	31	41	28
New orders received............	38	38	24
Production....................	37	43	20
Employment..................	23	63	14
Purchases.....................	44	31	25

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

Arizona Business Scene

1982 Census of Retail Trade

1912

TOM R. REX

Retail trade is an important industry to the Arizona economy. Together with wholesale trade, it is the state's second largest industry, contributing $6 billion to the Gross State Product in 1983, 16.7 percent of total GSP. Approximately two-thirds of this $6 billion can be traced to retail trade. The data that follow are taken from the 1982 Census of Retail Trade, one of a series of economic censuses undertaken by the U.S. Bureau of the Census every five years. Information from the censuses taken at the end of 1982 is just now becoming available.

Several kinds of businesses constitute Arizona's retail trade industry:

- Building materials, hardware, garden supplies, and mobile home dealers. The building materials segment accounts for two-thirds of this category's sales but for less than one-half of its establishments.
- General merchandise (department and variety stores). Department stores are responsible for nearly 90 percent of this category's sales but for only one-fourth of its establishments.
- Food stores. Grocery stores generate nearly all of this group's sales and constitute 80 percent of its establishments.
- Automotive dealers. New and used car dealers make 80 percent of this group's sales, but auto and home supply stores account for more than one-half of its establishments.
- Gasoline service stations.
- Apparel and accessory stores. With 40 percent of both sales and establishments, women's clothing stores are this category's largest business.
- Furniture, home furnishings, and equipment stores. This category is divided among furniture stores; radio, television and music stores; and home furnishing stores.
- Eating and drinking places. Eating places represent 80 percent of the establishments and produce 90 percent of the sales in this category.
- Drug and proprietary stores. Drug stores constitute nearly all of this category.
- Miscellaneous retail stores. This category includes liquor stores, used merchandise stores, non-store retailers, and specialty stores such as sporting goods outlets.

Summary Statistics of All Retail Establishments

A total of 24,153 retail firms were operating in Arizona at the end of 1982, an increase of 19 percent since the 1977 census. Less than one-half of those firms were incorporated, and only two-thirds had a payroll (see Table 1). More than one-half of Arizona's retail establishments were single proprietorships, many of which had no employees. Much of the information in the census was gathered only from the 16,069 firms that had a payroll.

Establishments with a payroll had average 1982 sales of $845,476, compared to an average of only $38,138 for firms without a payroll. Little variation existed across Arizona in average sales of firms without a payroll, but firms with a payroll were larger in the Phoenix metropolitan area and smaller in the nonmetropolitan areas.

The Phoenix area's share of Arizona's $13.6 billion in retail sales by firms with a payroll was 62 percent. (Firms without a payroll contributed only an additional $0.3 billion in sales.) Arizona's retail sales volume grew 71 percent between 1977 and 1982. Most of this increase was due to inflation, which amounted to 59 percent nationally and 69 percent in the Phoenix area.

Per capita retail sales in Arizona for 1982, using 1980 census populations, was $5,112. This figure was highest in the Phoenix area and lowest in the non-metropolitan areas (see Table 1). Because of the large volume of retail items purchased by tourists (estimated at $1.8 billion in 1980), the true value of goods purchased by Arizona residents was somewhat less.

The retail trade industry employed nearly 200,000 workers during March 1982, an average of 12 employees per establishment. Sales per employee in 1982 averaged $68,560. The payroll for these employees exceeded $1.6 billion, an average of $8,440 per worker. Average pay in this industry is relatively low because of the large number of part-time workers.

Summary Statistics by Kind of Business

More eating and drinking places operate in Arizona than any other kind of retail business (see Table 2). While this category accounted for 26 percent of all retail establishments, it was responsible for only 10 percent of the industry's sales. Food stores constituted the second largest number of establishments, providing one-fourth of the state's retail sales.

Since most department stores are large, the category of general merchandise stores generated the greatest sales per establishment, $3.5 million. Automotive dealers were the next highest dollar-volume retail business, averaging $2.2 million in sales. The least sales per establishment were made by eating and drinking places and by miscellaneous retail stores.

Sales of gasoline service stations grew most rapidly between 1977 and 1982, more than doubling. Sales of drug and proprietary stores grew 91 percent. With less than a 50 percent increase in sales, the retail component that includes building materials grew the least. General merchandise stores and automotive dealers each had less than a 60 percent rise in sales.

More than twice the number of workers were employed by eating and drinking places than by food stores, with general merchandise stores employing the third largest number. However, general merchandise stores averaged 55 employees per store, far more than the average of 17 employees per establishment for eating and drinking places.

Sales per employee were highest at gasoline service stations, $173,000, and at automotive dealers, $167,000, more than double the retail industry average. Eating and drinking places had the lowest volume of sales per employee, at $20,000.

The payroll of eating and drinking places in 1982 was only slightly greater than that of food stores; each group accounted for a little more than 20 percent of the retail payroll. The lowest average payroll per employee, $5,000 for workers at eating and drinking places, was less than one-third the average at automotive dealers.

The statistics presented in this article illustrate the diversity found within the retail trade industry. Similar data will be disseminated by the Census Bureau on wholesale trade, the service industry, the construction industry, manufacturing, the mineral industry, and transportation. An agricultural census was also conducted in 1982.

TABLE 1
1982 RETAIL TRADE SUMMARY STATISTICS

	Arizona	*Phoenix MSA**	*Tucson MSA**	*Rest of State*
Total number of establishments	24,153	13,216	4,500	6,437
Percent incorporated	43	46	47	32
Percent with payroll	67	66	71	66
Total sales, establishments with payroll (in billions of dollars)	13.6	8.4	2.5	2.7
Sales per establishment (in thousands of dollars)	845	966	801	632
Sales per capita	5,112	5,656	4,881	4,081
Number of employees (in thousands)	198	120	40	39
Employees per establishment with payroll	12	14	13	9
Sales per employee	68,560	69,959	63,727	69,227
Total payroll (in millions of dollars)	1,672	1,051	330	292
Payroll per employee	8,440	8,786	8,261	7,553

*MSA = Metropolitan Statistical Area

Source: 1982 Census of Retail Trade, Geographic Area Series: Arizona, U.S. Department of Commerce, Bureau of the Census.

TABLE 2
ARIZONA RETAIL TRADE BY KIND OF BUSINESS
(Establishments With Payroll, 1982)

	Number of Establishments	*Sales in Billions*	*Payroll in Millions*	*Number of Employees*
Building materials, hardware, garden supply, mobile home dealers	685	$ 0.7	$ 80	7,293
General merchandise stores	426	1.5	191	23,475
Food stores	1,959	3.4	350	31,572
Automotive dealers	1,156	2.6	253	15,389
Gasoline service stations	1,204	1.3	62	7,544
Apparel and accessory stores	1,468	0.5	72	9,615
Furniture, home furnishings, and equipment stores	1,243	0.6	89	7,497
Eating and drinking places	4,191	1.4	360	71,448
Drug and proprietary stores	502	0.5	61	6,037
Miscellaneous retail stores	3,235	1.1	155	18,292
TOTAL*	16,069	$13.6	$1,672	198,162

*Totals may not add due to rounding

Source: 1982 Census of Retail Trade, Geographic Area Series: Arizona, U.S. Department of Commerce, Bureau of the Census.

Arizona Gross State Product Second Quarter, 1984

TOM R. REX

The Arizona Gross State Product (GSP) rose at an inflation-adjusted rate of 8.7 percent during the second quarter, 1984, extending the rapid expansion of the Arizona economy to a sixth consecutive quarter. This growth rate was lower than expected, however — only one-half the rate of the first quarter, 1984.

The slower second quarter growth can be attributed largely to the state's agricultural and manufacturing sectors. Agricultural GSP dropped sharply, mainly due to seasonal factors and to changes in the federal government's payment-in-kind program. Manufacturing GSP grew only slightly, following five consecutive quarters of at least 13 percent increases.

Second quarter GSP growth was led by large gains both in trade and in finance, insurance, and real estate, major sectors that each account for at least 17 percent of the total GSP. Continued rapid growth in the construction and mining industries also contributed to the overall expansion. Although mining sector output is gradually recovering from the severe 1982 recession, the mining GSP remains below its 1981 peak.

Increases in the productivity of Arizona workers continued to contribute to GSP growth during the second quarter. Annualized output per employee rose 6.4 percent, the fifth large gain of the last six quarters. The mining sector posted the greatest gain in output per employee.

Employment growth in Arizona maintained an annualized rate between 5 and 6 percent during the second quarter. The most significant advances occurred in the construction sector; mining and government employment declined slightly.

TABLE 1
ARIZONA GROSS STATE PRODUCT

Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1972 Dollars, Annualized*	*Annualized Percent Change (1972 Dollars)*
First, 1982	$32.458	$16.596	−14.6%
Second, 1982	32.776	16.523	− 1.8
Third, 1982	32.458	16.319	− 4.9
Fourth, 1982	32.358	16.103	− 5.3
First, 1983	33.730	16.601	12.4
Second, 1983	35.705	17.535	22.5
Third, 1983	37.270	18.156	14.2
Fourth, 1983	38.145	18.496	7.5
First, 1984	39.752	19.302	17.4
Second, 1984	40.833	19.724	8.7

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in co-sponsorship with the ASU College of Business Dean's Council of 100.

Arizona GSP continued to grow more rapidly than the Gross National Product (GNP), which increased at a slower rate of 7.1 percent during the second quarter from 10.1 percent during the first quarter. GNP growth during the third quarter was less than 2 percent, suggesting that GSP growth will also continue slowing. GNP growth of less than 3 percent is slower than the long-term historical average. If this slower growth were to continue during the fourth quarter, the national economy would be in a "growth recession," a situation in which the economy expands at such a sluggish pace that unemployment begins to rise.

In Arizona, the long-term average GSP growth rate is 5.5 percent. While expansion of the Arizona economy during the second half of 1984 may fall below this rate, it is likely to remain well above the national rate of growth. The Arizona unemployment rate probably would not be much affected by slower growth in the 3-to-5 percent range.

Even if expansion of the Arizona economy slows during the second half of 1984, average growth for the entire year probably will exceed 11 percent. The greatest growth during any prior year was 10.7 percent in 1978.

Metropolitan Phoenix Consumer Price Index Third Quarter, 1984

TOM R. REX

Prices of goods and services in the Phoenix metropolitan area rose 1.7 percent during the third quarter, 1984, the fifth increase in the last six quarters that has been between 1.5 and 1.9 percent (see Table 1). The third quarter, 1984, index for all items, 183.1 on a 1977 = 100 base, is 5.7 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research, College of Business, Arizona State University. The quarterly CPI results from comprehensive surveys conducted by the Bureau in cooperative cosponsorship with Valley National Bank.

Price increases during the third quarter were more broadly based than they have been in most recent quarters. Higher inflation in housing costs was offset by a smaller gain in the transportation category. The other major category, food and beverages, continued to post relatively small increases.

Food and Beverages

The modest second quarter advance of 1.0 percent was led by a 4.0 percent boost in the prices of alcoholic beverages. The food at home and food away from home components gained less (see Table 2).

Most of the inflation for food purchased at grocery stores was caused by a 3.8 percent surge in the index for fruits and vegetables; fresh fruit prices climbed a seasonal 14.0 percent. The meats, poultry, fish, and eggs category advanced slightly, as the largest increase in nearly four years in pork prices was offset by a 27.8 percent decline in the price of eggs, the largest in the history of the Phoenix CPI. The indexes for cereal and bakery products and other food at home recorded small increases, while the index for dairy products declined.

Housing

The housing index again recorded its largest advance in more than two years due to gains throughout the category. Renters' costs rose 2.3 percent, although the rent of a dwelling increased only 1.1 percent. Homeowners' costs rose 1.4 percent; while this is a moderate gain, it is more than in any quarter since the new methodology became effective in 1983. The third quarter increase was a record for home maintenance commodities and the largest in more than eight years for household furnishings and operations. Fuel and other utility costs continued to experience moderately large increases (1.9 percent).

Transportation

The smaller increase during the third quarter in the transportation category was somewhat misleading since several components experienced large gains. However, prices for new cars and gasoline fell, the latter by 6.7 percent. Components with large increases included used cars, which are now 19.6 percent more expensive than they were one year ago; vehicle parts and equip-

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Percent Change from Preceding Quarter						
Expenditure Category	*Relative Importance*	*1st 1983*	*2nd 1983*	*3rd 1983*	*4th 1983*	*1st 1984*	*2nd 1984*	*3rd 1984*
ALL ITEMS	100.0	0.2	1.7	1.6	0.5	1.9	1.5	1.7
Food and Beverages	19.0	2.3	1.5	−0.1	0.4	1.8	0.7	1.0
Housing	38.9	−0.5	1.8	0.9	−0.2	0.6	2.0	2.3
Apparel and Upkeep	4.8	0.6	1.8	1.0	1.7	2.5	−1.3	−0.1
Transportation	21.9	−1.9	2.5	3.3	0.5	1.6	2.3	1.2
Medical Care	6.6	3.0	1.0	4.7	2.0	11.4	1.1	3.0
Entertainment	4.6	1.7	−2.1	−0.2	2.9	1.1	2.3	2.6
Other Goods and Services	4.2	2.6	2.7	4.7	0.5	0.8	1.1	2.1

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

ment, with an 11.0 percent jump that did not completely offset five successive quarters of decline; vehicle maintenance and repair, a category in which prices rose 8.8 percent — the largest gain in more than seven years; and public transportation, with an increase of 9.1 percent.

Medical Care

The pattern of alternating quarters of large and small advances in the medical care index continued, with a 3.0 percent third quarter rise following a more modest 1.1 percent second quarter gain. Hospital costs, however, remained nearly stable for the fourth consecutive quarter. The third quarter gain in medical care was due mostly to higher fees for professional services as well as to higher prices for drugs and medical supplies. Health insurance premiums rose only 2.1 percent but were still 41.7 percent higher than they were one year ago.

Other Categories

The index for apparel and upkeep fell for the second consecutive quarter as price declines for women's and girls' apparel, jewelry and luggage, and apparel services offset gains for men's and boys' apparel. Entertainment costs rose 2.6 percent in the third quarter, with price increases for reading materials primarily responsible. An advance in the other goods and services category was larger than it was in the previous three quarters.

Comparison Areas

The third quarter inflation rate in the Phoenix metropolitan area was once again higher than the national average. The Valley experienced greater increases in all categories except apparel and upkeep and food and beverages.

These larger increases during the last year have pushed the inflation rate higher in the Phoenix area than in each of the comparison areas (see Table 3). Metropolitan Phoenix inflation since third quarter, 1983, has been greater than in each of the comparison areas for apparel and upkeep, transportation, medical care, and entertainment.

Outlook

The annual inflation rate continues to remain stable between 5.5 percent and 6 percent in the Phoenix area and between 4 percent and 4.5 percent nationally. Generally, inflationary pressures increase at this phase of the economic cycle. However, most indicators do not currently signal higher inflation; many forecasters expect it to rise only slightly in 1985.

The higher inflation rate in the Phoenix area continues a relationship that has been in effect since the mid-1970s: During recessions and recoveries from recessions, the inflation rate has been lower than the national average; during economic expansions, it has been higher. Many economists believe that rapid economic growth accompanied by low levels of unemployment re-

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
THIRD QUARTER, 1984
(1977 = 100)

Expenditure Category	*Last Qtr. Index*	*This Qtr. Index*	*Percent Change*	*Year-Ago Change*
ALL ITEMS	180.1	183.1	1.7	5.7
Food and Beverages	164.1	165.7	1.0	3.9
Food	165.0	166.2	0.7	4.1
Food at Home	162.8	164.0	0.8	4.0
Cereal and Bakery Products	171.8	172.5	0.4	5.1
Meats, Poultry, Fish, and Eggs	156.1	156.4	0.2	3.7
Dairy Products	156.0	154.1	-1.2	1.5
Fruits and Vegetables	171.2	177.7	3.8	5.5
Other Food at Home	152.8	153.9	0.7	4.0
Food Away from Home	166.5	167.7	0.7	4.3
Housing	188.7	193.0	2.3	4.8
Shelter	199.8	203.8	2.0	4.5
Renters' Costs**	106.6	109.1	2.3	7.3
Homeowners' Costs**	101.9	103.3	1.4	3.1
Fuel and Other Utilities	174.3	177.6	1.9	7.9
Gas (piped) & Electricity	196.9	201.1	2.1	6.9
Household Furnishings and Operations	142.7	147.7	3.5	3.0
Apparel and Upkeep	140.0	139.8	-0.1	2.7
Transportation	177.4	179.6	1.2	5.7
Private Transportation	174.8	175.8	0.6	5.7
New and Used Cars	185.5	190.5	2.7	12.2
Motor Fuels	201.1	187.7	-6.7	-4.7
Public Transportation	221.5	241.6	9.1	5.9
Medical Care	226.9	233.7	3.0	18.2
Entertainment	167.3	171.7	2.6	9.1
Other Goods and Services	160.8	164.2	2.1	4.6

An ** indicates that the base period is second quarter, 1983.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

sults in greater inflationary pressure. This seems to be true in the Phoenix area, where the economy grows much more rapidly during economic expansions than the national economy, with lower unemployment. The result has been higher inflation. Currently, the unemployment rate in Maricopa County is only 3.2 percent, while the national rate is 7.4 percent. Inflation-adjusted growth in the Arizona Gross State Product is expected to exceed 11 percent during 1984, compared to less than 7 percent expected growth in the Gross National Product.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX UNITED STATES AND COMPARATIVE CITIES
THIRD QUARTER, 1984

	Percent Change from Last Quarter		*Percent Change from One Year Ago*			
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*	*Denver*	*San Diego*
ALL ITEMS	1.7	1.1	5.7	4.2	4.2	4.8
Food and Beverages	1.0	1.1	3.9	4.2	5.0	3.7
Housing	2.3	1.5	4.8	4.5	5.0	5.5
Apparel and Upkeep	−0.1	0.6	2.7	1.4	0.0	−0.7
Transportation	1.2	0.2	5.7	3.5	2.3	5.0
Medical Care	3.0	1.3	18.2	6.1	5.5	7.8
Entertainment	2.6	1.1	9.1	4.0	3.0	1.3
Other Goods and Services	2.1	1.3	4.6	6.3	7.3	8.0

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics.

ARIZONA SALES OF ELECTRICAL POWER
(In Millions of Kilowatt Hours)

	1984	*1983*	*Percent Change From Prior Year*	*Percent Change From Prior Month*
August	3615.1	3313.0	+9.1%	− 0.5%
September	3178.0	3196.9	−0.6	−12.1
October	2144.8	2318.6	−7.5	−32.5

Source: Arizona Power Authority (based on reports from major suppliers).

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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
BUREAU OF BUSINESS AND ECONOMIC RESEARCH

Inflation Rate Accelerates in 1984

Consumer prices in the Phoenix metropolitan area jumped an average of 5.8 percent in 1984, ending the moderating trend in consumer price inflation that had begun in 1981. While this gain was a substantial acceleration from the 1.6 percent increase in 1983, it can be viewed as moderate when considering the rapid growth in the Arizona economy during 1984 and in comparison with the inflation rate at comparable stages of previous economic cycles (see Figure I). Further, the inflation rate stabilized at this higher level, showing no upward trend during 1984.

Several methods can be used to calculate the inflation rate from the consumer price index (CPI). In this article, the annual average percent change is used: the average of the four quarterly index values for a year, compared to the average of the previous year. The other widely used method is employed in the quarterly CPI reports (see "Valley Inflation Slows," opposite). In this method, the index value at the end of the year is compared to the value at the end of the previous year. Because of a stable inflation rate during 1984, the two methods measure nearly identical rates.

CONSUMER PRICES IN 1984

Only two of the seven major categories in the metro Phoenix CPI did not post a larger gain in 1984 than in 1983: prices of food and beverages were stable at a 3.5 percent annual rate, and prices of other goods and services increased much less than in 1983. While certain items, such as used cars and health insurance, contributed more heavily to higher infla-

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Valley Inflation Slows in Fourth Quarter

Prices of goods and services in the Phoenix metropolitan area rose 0.7 percent during the fourth quarter, the smallest quarterly increase of 1984 (see Table 1). The fourth quarter 1984 index, 184.4 on a 1977 = 100 base, is 5.9 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research in the College of Business, Arizona State University. Comprehensive pricing

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tion rates in 1984, most components of the other five major categories added to the acceleration as well.

The low increase in 1984 housing costs, 4.1 percent, was still a sharp change from the 1.8 percent decrease in 1983. Shelter costs, for both homeowners and renters, posted larger gains in 1984, as did fuel and other utility costs, although electricity rate increases remained minimal. The apparel and upkeep and the entertainment categories also recorded higher, but moderate, gains in 1984.

The two categories most responsible for higher 1984 inflation were transportation and medical care. The transportation index rose 7.3 percent, led by larger advances in the indexes for used cars (20.6 percent), vehicle insurance (12.4 percent) and public transportation (9.7 percent). After a 7.8 percent decline in 1983, gasoline prices rose a slight 1.6 percent during 1984.

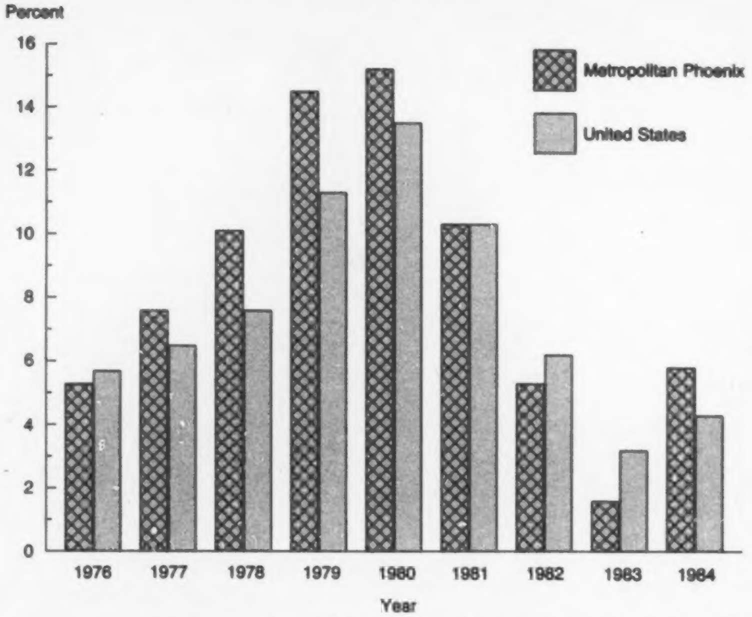
The medical care index surged 19.3 percent in 1984, despite slower advances in four of the five subcategories. The gain in the hospital index decelerated from 14.8 percent in 1983 to 4.7 percent in 1984. However, the health insurance index ballooned 47.7 percent, following a rise of 25.0 percent in 1983.

COMPARISON TO OTHER AREAS

Inflation in the Phoenix area during 1984 was approximately one-third higher than the national average, with one-half of the difference due to the swelling of Phoenix health insurance premiums. Nevertheless, the overall inflation rate was higher in San Diego than in Phoenix, as shown in Table 2.

The higher inflation in Phoenix during 1984, compared to the national average, continued the area's pattern of higher inflation than experienced by the nation as a whole during economic expansions. Higher inflation is a result of Phoenix's superior growth and low unemployment rate.

FIGURE I
METROPOLITAN PHOENIX AND U.S. CONSUMER PRICE INDEXES
Annual Percent Changes, 1976-1984



Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

TABLE 1
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
(1977 = 100)
Selected Items

Category	Relative Importance[1]	Annual Average Index *1984*	*1983*	Percent Change
ALL ITEMS	100.0%	181.2	171.3	5.8%
Food and Beverages	19.0	164.7	159.1	3.5
Food	17.7	165.3	159.6	3.6
Food at Home	11.5	163.2	158.2	3.1
Food Away from Home	6.2	166.7	159.6	4.4
Housing	38.9	189.9	182.4	4.1
Shelter	24.6	202.1	194.1	4.2
Fuel and Other Utilities	6.5	170.0	158.3	7.4
Household Furnishings and Operations	7.9	145.1	142.9	1.5
Apparel and Upkeep	4.8	140.5	135.4	3.8
Transportation	21.9	178.5	166.3	7.3
Private Transportation	20.2	175.2	163.6	7.1
Public Transportation	1.6	233.8	213.1	9.7
Medical Care	6.6	231.3	193.8	19.3
Entertainment	4.6	168.7	159.5	5.8
Other Goods & Services	4.2	162.5	152.7	6.4

[1] Expressed as a percent of all items. The relative importance of the seven major categories sums to 100.0 percent. Only selected detail items are shown; thus, the relative importance of these items will not necessarily sum to that of the major categories.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with Valley National Bank.

INFLATION FORECASTS

With the start of 1985, economic forecasters and econometric forecasting services have issued their national inflation predictions. In its December 31, 1984, issue, *Business Week* presented 1985 forecasts by 26 economists and 14 econometric services, which ranged from a 2.3 percent to a 7.0 percent national inflation rate in 1985, with a consensus forecast for a 4.4 percent rate.[1] The Economic Unit at *U.S. News and World Report* was somewhat more optimistic, forecasting an increase of 3.7 percent in consumer prices during 1985.[2]

Based on more recent economic data, the January forecast by the widely used Data Resources, Inc. (DRI) econometric forecasting service is also for lower inflation — a 3.5 percent rise in the national CPI

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE METROPOLITAN AREAS
1984 Annual Average Percent Change

Expenditure Category	Phoenix	United States	Denver*	San Diego*
ALL ITEMS	5.8%	4.3%	3.9%	6.0%
Food and Beverages	3.5	3.8	4.9	4.7
Housing	4.1	4.1	3.3	6.6
Apparel and Upkeep	3.8	1.9	1.1	4.2
Transportation	7.3	4.5	3.8	7.0
Medical Care	19.3	6.2	6.0	5.5
Entertainment	5.8	3.7	2.6	2.2
Other Goods & Services	6.4	6.7	7.9	8.1

*Estimated

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data from the U.S. Department of Labor, Bureau of Labor Statistics.

for 1985 and a slight acceleration in the inflation rate to 3.9 percent in 1986. This DRI forecast is based on assumptions that another good year lies ahead, with real GNP growth of 3.0 percent in 1985; continuing consumer confidence in the strength of the economy; no change in monetary policy; and moderate cuts in federal spending by Congress.[3] The Forecasting Center of the U.S. Chamber of Commerce also predicts a national inflation rate of 3.5 percent for 1985 but expects a larger uptick in 1986 to 4.5 percent.[4]

This favorable outlook for inflation reflects expectations of moderate wage increases, increasing productivity, declining oil prices, little pressure from other commodity prices, and a continuing flow of relatively low-priced imported goods into the United States, due to the strong dollar. Although unemployment has fallen sharply since its peak during the last recession, the recovery does not yet seem to have generated pressure for wage increases. In many parts of the country, unemployment remains well above the lowest rates reached during previous expansions. Furthermore, in many industries, the bargaining power of labor has been substantially weakened by deregulation and/or competition from foreign goods. As a result, the unit labor costs of non-farm businesses increased only 1.4 percent in 1984 and are forecast to rise another small 2.8 percent in 1985.

With last fall's improved harvests, the January DRI forecast is for a 2.3 percent decline in wholesale farm prices, despite the higher fruit and vegetable prices resulting from the January freeze in the Southeast.[5] OPEC has been forced to lower oil prices, and the strong dollar has generally kept commodity prices depressed. These conditions are expected to continue and should restrain energy and raw material prices for the remainder of the year.

The 1985 rise in consumer prices in the Phoenix metropolitan area is forecast to follow the pattern of previous economic expansions, in which the regional inflation rate has exceeded the national average. A 1985 increase of 5.7 percent in the Metropolitan Phoenix CPI is predicted by the Bureau of Business and Economic Research.[6] This slight decrease from the 1984 rate is in line with the decline forecast for the nation as a whole.

— **Tom R. Rex**
Research Manager

— **Timothy D. Hogan**
Dr. Hogan is Professor of Economics in the ASU College of Business. He is also Director of the State Data Center.

[1] "The Economy: An Expansion Without the Explosions," *Business Week* (December 31, 1984): 66-67.

[2] "Business: More Good Times Ahead," *U.S. News and World Report* (December 31, 1984/January 17, 1985): 56-60.

[3] Data Resources, Inc., *U.S. Forecast Summary* (February 1985).

[4] "Ahead: A Soft Landing Onto Firmer Ground," *Nation's Business* (January 1985): 10-15.

[5] Data Resources, Inc., *U.S. Forecast Summary* (February 1985): 4.

[6] Luke Koons and Tom R. Rex, "Forecasting Arizona Economic Activity," *Arizona Business* (Fourth Quarter, 1984): 10-14.

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continued from page 1

surveys are conducted each quarter by the Bureau in cosponsorship with Valley National Bank.

COMPONENT INDEXES

The 0.7 percent fourth quarter increase was almost entirely due to gains in the transportation and medical care indexes; a 2.2 percent increase in the transportation component was responsible for two-thirds of the advance. The higher transportation index was a result of higher gasoline prices (after a decline during the third quarter), the largest rise since 1976 in vehicle insurance rates, and continued increases in used car prices. However, the fourth quarter gain of 1.9 percent in the used car index was much smaller than in the previous three quarters. In the medical care index, increases in health insurance premiums caused almost the entire advance, as during the first two quarters of 1984.

Improvement in the overall index over the 1.7 percent third quarter gain resulted largely from a sharp deceleration in the housing and food and beverages categories, although fourth quarter inflation was lower in all components except transportation and apparel and upkeep. In many cases, the fourth quarter improvement was due to seasonal factors. In the housing index, for example, the seasonal drop in electricity rates, combined with declines in utility gas rates and in prices of household furnishings and operations, more than offset gains in the shelter component. Seasonality also explains the slight gain in the index for food and beverages: Typically, inflation in this category is lowest during the fourth quarter. Indexes and percent changes for selected categories are presented in Table 2.

COMPARISON AREAS

The fourth quarter inflation rate in the Phoenix metropolitan area was identical to the national average. The Valley experienced greater increases in transportation and medical care but lesser gains in the apparel and upkeep and the other goods and services categories.

During the last year, the inflation rate in Phoenix was greater than in Denver and the United States as a whole, but slightly less than in San

Diego (see Table 3). Increases in transportation, medical care, and entertainment were larger in the Valley than in each of the comparison areas.

Medical care is the category in which the Phoenix inflation rate deviates the most from rates in other areas. The change in this category is not exactly comparable to that of other areas, however, because the Bureau of Labor Statistics, which conducts the CPI for all areas other than Phoenix, does not directly price health insurance. Although this methodological difference normally has little effect, the health insurance index for 1984 rose 49.5 percent in the Phoenix CPI but approximately 5 percent in the national CPI. If health insurance, a major component of the medical care category, is omitted from both the Phoenix CPI and the national CPI, the 1984 increase in medical care costs in Phoenix (3.4 percent) is less than the national increase (approximately 7 percent).

The Phoenix all items index, excluding health insurance, rose only 4.9 percent in 1984, compared to an unadjusted gain of 5.9 percent. However, the exclusion of health insurance had little impact on the 4.0 percent rise in the national CPI. Thus, the inflation rate in Phoenix during 1984 was higher than the national average, although approximately one-half of the difference is due to the health insurance component.

OUTLOOK

With inflation remaining stable at an annual rate between 5.5 and 6 percent in the Phoenix area and between 4 and 4.5 percent nationally, the inflation outlook has not changed in recent months. An acceleration in the inflation rate normally occurs at this stage of the economic cycle, but this increase is expected to be minimal during 1985.

In the Phoenix CPI, somewhat higher general inflation is likely to be offset by lower inflation in specific categories, particularly health insurance and used cars. Thus, Phoenix inflation during 1985 should be similar to the rate during 1984. However, it is prudent to note that at no time in the last 20 years has inflation not accelerated with economic expansion.

— **Tom R. Rex**
Research Manager

TABLE 1
PERCENT CHANGES
IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Percent Change from Preceding Quarter							
Expenditure Category	*Relative Importance*	*1st 1983*	*2nd 1983*	*3rd 1983*	*4th 1983*	*1st 1984*	*2nd 1984*	*3rd 1984*	*4th 1984*
ALL ITEMS	100.0	0.2	1.7	1.6	0.5	1.9	1.5	1.7	0.7
Food and Beverages	19.0	2.3	1.5	−0.1	0.4	1.8	0.7	1.0	0.2
Housing	38.9	−0.5	1.8	0.9	−0.2	0.8	2.0	2.3	−0.1
Apparel and Upkeep	4.8	0.6	1.8	1.0	1.7	2.5	−1.3	−0.1	0.4
Transportation	21.9	−1.9	2.5	3.3	0.5	1.6	2.3	1.2	2.2
Medical Care	6.6	3.0	1.0	4.7	2.0	11.4	1.1	3.0	2.7
Entertainment	4.6	1.7	−2.1	−0.2	2.9	1.1	2.3	2.6	0.3
Other Goods and Services	4.2	2.6	2.7	4.7	0.5	0.8	1.1	2.1	1.2

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
FOURTH QUARTER, 1984
(1977 = 100)

Expenditure Category	*Last Qtr. Index*	*This Qtr. Index*	*Percent Change*	*Year-Ago Change*
ALL ITEMS	183.1	184.4	0.7	5.9
Food and Beverages	165.7	166.0	0.2	3.8
Food	166.2	166.6	0.3	3.8
Food at Home	164.0	164.1	0.1	3.7
Cereal and Bakery Products	172.5	177.7	3.0	10.3
Meats, Poultry, Fish, and Eggs	156.4	156.0	−0.2	1.0
Dairy Products	154.1	156.2	1.4	2.2
Fruits and Vegetables	177.7	176.0	−1.0	5.8
Other Food at Home	153.9	152.2	−1.1	2.8
Food Away from Home	167.7	168.8	0.7	4.0
Housing	193.0	192.8	−0.1	4.9
Shelter	203.8	206.6	1.4	5.4
Renters' Costs**	109.1	112.1	2.7	9.3
Homeowners' Costs**	103.3	104.0	0.6	3.3
Fuel and Other Utilities	177.6	168.4	−5.2	5.7
Gas (piped) and Electricity	201.1	183.7	−8.6	4.1
Household Furnishings & Operations	147.7	147.2	−0.4	2.3
Apparel and Upkeep	139.8	140.4	0.4	1.4
Transportation	179.6	183.6	2.2	7.6
Private Transportation	175.8	179.7	2.2	7.2
New and Used Cars	190.5	192.7	1.2	12.6
Motor Fuels	187.7	192.6	2.6	−1.0
Public Transportation	241.6	247.6	2.5	10.8
Medical Care	233.7	240.1	2.7	19.1
Entertainment	171.7	172.2	0.3	6.5
Other Goods and Services	164.2	166.2	1.2	5.3

An ** indicates that the base period is second quarter, 1983.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
Fourth Quarter, 1984

	Percent Change from Last Quarter		Percent Change from One Year Ago			
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*	*Denver*	*San Diego*
ALL ITEMS	0.7	0.7	5.9	4.0	2.8	6.3
Food and Beverages	0.2	−0.2	3.8	3.9	3.7	3.4
Housing	0.1	0.4	4.9	4.3	3.3	7.8
Apparel and Upkeep	0.4	2.5	1.4	2.2	2.0	7.4
Transportation	2.2	1.0	7.6	3.2	1.4	6.3
Medical Care	2.7	1.5	19.1	6.2	6.4	4.3
Entertainment	0.3	1.0	6.5	3.8	−2.5	3.8
Other Goods and Services	1.2	3.0	5.3	6.2	4.5	7.8

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 is from the U.S. Department of Labor, Bureau of Labor Statistics.

GSP Grows 9.6 Percent During 3rd Quarter

The Arizona Gross State Product (GSP) grew at an inflation-adjusted, annualized rate of 9.6 percent during the third quarter, 1984, extending the rapid expansion of the Arizona economy to a seventh consecutive quarter. Growth in GSP since the end of the 1982 recession has been 25.4 percent, more than during any earlier seven-quarter period.

GROWTH, BY SECTOR

The third quarter GSP growth rate was nearly identical to the revised second quarter rate (see Table 1). The growth in several industries slowed during the third quarter, notably in the construction and government sectors, in which gross product contracted. However, expansion in the manufacturing sector resumed after a nearly flat second quarter; agriculture largely recovered from its sharp second quarter drop; and the mining sector posted its second consecutive strong gain. Still, the gross product of the mining industry remained far below its 1981 peak, and the price of copper continued to decline during the third quarter.

ADJUSTING THE GSP

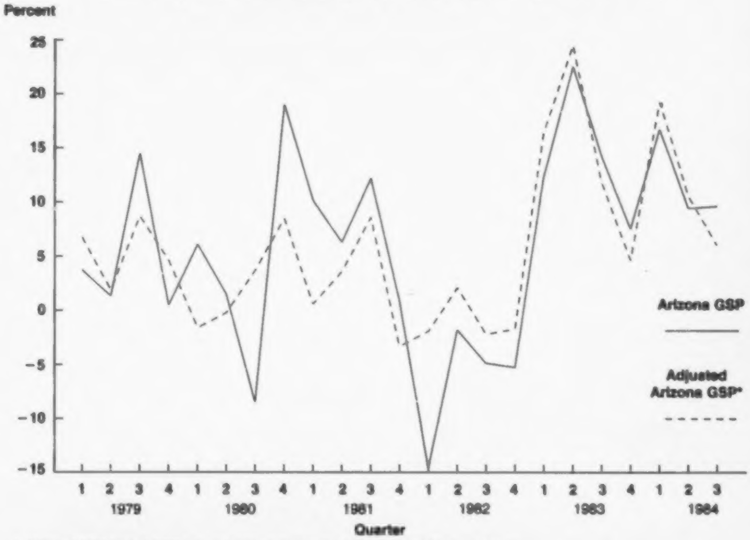
Most sectors of the Arizona economy follow essentially the same economic cycle, one that roughly coincides with the national business cycle. The Arizona agriculture and mining industries, however, do not follow this economic cycle and are subject to extreme fluctuations in GSP growth from quarter to quarter. Even though mining and agriculture contribute relatively insignificant shares of the Arizona GSP, these severe quarterly fluctuations (not uncommonly 100 percent or more) disguise the economic cycle that the greater part of the Arizona economy is experiencing.

Therefore, an adjusted GSP has been calculated, which subtracts the gross product of the agriculture and mining sectors from total GSP. The result, illustrated in Figure I, is a smoother cycle that coincides more closely with the cycle of the Gross National Product.

During recent years, major differences have occurred in the two measures of GSP. The unadjusted GSP indicates that the short 1980 recession happened during the third quarter in Arizona, while it took place during the first two quarters nationally. The difference is primarily due to dramatic growth in the Arizona mining industry during the first two quarters of 1980, including 134 percent annualized growth in the first quarter; in the third quarter, however, mining's gross product declined 160 percent due to a strike. The exclu-

continued on page 12

FIGURE I
ARIZONA GROSS STATE PRODUCT
Quarterly Percent Change in 1972 Dollars, Annualized



* Adjusted GSP is total GSP minus the gross products of mining and agriculture sectors

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in co-sponsorship with the ASU College of Business Dean's Council of 100.

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product				Gross National Product
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1972 Dollars, Annualized*	*Annualized Percent Change (1972 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1972 Dollars)*
First, 1983	$33.730	$16.601	12.4%	16.5%	3.3%
Second, 1983	35.705	17.535	22.5	24.5	9.4
Third, 1983	37.270	18.156	14.2	11.8	6.8
Fourth, 1983	38.145	18.496	7.5	4.6	5.9
First, 1984	39.752	19.268[r]	16.7[r]	19.2	10.1
Second, 1984	40.833	19.719[r]	9.4[r]	10.5	7.1
Third, 1984	41.738	20.193	9.6	6.1	1.6

* The adjusted GSP is the annualized GSP in billions of 1972 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

Purchasing Survey Indicators Turn Positive in January

The final few months of 1984 may have been the pause that refreshed the economy. While the growth rate in January continued sluggish, the slowing trend evident during the fourth quarter of 1984 appears to have halted, and signs of an acceleration in the growth rate now are appearing. All indicators of economic performance again were positive, for the first month since last October. Production, employment and new orders received from customers all registered an encouraging upward movement.

The foundation for a resumption of economic growth appears to be in place. Interest rates have fallen, energy costs likely will decline even further during the early part of 1985 with the evident disarray in OPEC, and no inventory overhang threatens a resumption of growth. The Arizona economy is starting the new year at the highest level ever and seems poised to resume a moderate, but increasing, expansion during the first half of 1985.

Table 1 presents the results of the November, December and January surveys of Arizona purchasing managers. Analysis of these results follows.

NOVEMBER

Prices paid for major purchased items went up in November at a rate only slightly greater than in October. Both the October and November increase rates were smaller than in any month since March 1983, showing that inflation continues under control and poses no immediate threat to economic stability.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

Delivery time on shipments from vendors stretched again, but the increase was the smallest since February 1983 (25 months ago). The reduction of vendor backlogs over the last half of the year is a result of the general economic slowdown.

Inventory levels of purchased materials saw a net decrease for the first time since January 1983 (26 months ago), when the current economic expansion began. As new order entry rates have come down over the past several months, Arizona firms have been watching inventory closely and no longer are adding to their inventory investment. If this disinvestment continues over the next few months, as now appears likely, it will have a negative influence on further economic growth. However, the close control being exercised over inventories should help to avert any major economic tailspin.

New orders received from customers went up again in November, but at the smallest rate since the recovery began in January 1983.

Production also increased at the lowest monthly rate since January 1983. This slower rate of production growth is a reaction to the slowdown in order receipts and likely will continue over the next few months, possibly even turning negative.

Employment turned negative for the first time since the recovery began in January 1983. This shows that we have entered a "no-growth" situation. Further cuts in employment levels likely will occur over the next few months.

Purchases by Arizona firms went up again in November, but the increase was the smallest since this data series was initiated in March 1983. The plateau in new order receipts and slowing of production growth has eliminated the need to increase flow rates for incoming material.

DECEMBER

Prices paid for major purchased items in December experienced the smallest hike since February 1983. The overall price increase in the fourth quarter was very low, showing that inflationary pressures remain well under control.

Delivery time on shipments from vendors lengthened, but the December stretch-out was small, as has been the case each month of the fourth quarter. The general slowing of the rate of economic growth has taken considerable pressure off vendor delivery backlogs.

Inventory levels of purchased materials advanced slightly, following November's minor drop. Purchased material inventory levels of Arizona firms have shown almost no change over the past six months, as the slowdown in the growth rate has eliminated the need for stock building and has caused company management to tighten inventory control systems.

New orders received from customers went up in December at a greater rate than in November. However, the past two months have seen the smallest order growth since January 1983, the month when the current recovery and expansion began. This provides definite evidence that a pronounced pause in growth has taken place.

Production of Arizona firms increased in December at approximately the same relatively small rate as in November. November and December experienced the lowest net increases since January 1983. This was a needed adjustment to the lower incoming order rates.

Employment was flat in December, marking the second consecutive month of zero payroll growth. The employment increase rate began to tail off last August, in reaction to the slowing growth rate. However, it is significant that employment is holding (not decreasing) at a very high aggregate level.

Purchases by Arizona firms increased at a somewhat greater rate than in November, although that rate was still small by historical standards.

Capital expenditure plans: A special question is asked on each December survey, concerning *anticipated* expenditures for new plant and equipment during 1985. The responses indicate that it will be a very good year—on a par with the past year, which was very expansionary,

TABLE 1
PURCHASING SURVEYS

Key Indicators	November 1984			December 1984			January 1985		
	Higher	*Same*	*Lower*	*Higher*	*Same*	*Lower*	*Higher*	*Same*	*Lower*
Prices paid for major commodities	23	67	10	18	72	10	31	59	10
Delivery time from vendors	24	63	13	31	54	15	20	67	13
Purchased materials inventory level	26	46	28	31	42	27	29	45	26
New orders received	34	35	31	37	33	30	38	36	26
Production	35	42	23	34	43	23	40	41	19
Employment	18	63	19	19	62	19	19	68	13
Purchases	35	38	27	41	31	28	42	35	23

Percent of Purchasing Managers Indicating Each Response (Compared to Prior Month)

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

and equal to the boom years of the late 1970s. The results from this special question over the past 10 years are shown in Table 2.

Thus, Arizona's economy has finished the year on a growth plateau. The very strong growth performance exhibited during most of 1983 and the first half of 1984 could not have been maintained indefinitely. The pause in the expansion has occurred at a very high level. The specter of a burgeoning federal deficit, coupled with a massive unfavorable merchandise trade deficit, does not augur well for an immediate, strong reacceleration of growth. However, the substantial reductions in interest rates of the past two months likely will postpone any dangerous economic tailspin. The results of the next few months will determine which direction this end-of-the-year turning point will take.

JANUARY

Prices paid for major purchased items increased in January at the highest rate since last August, although the Arizona economy has enjoyed relatively stable price levels over the last part of 1984. While the January results show that inflation is moving up somewhat, the strength of the dollar in foreign trading, coupled with the downward trend in petroleum prices, likely will prevent any major resumption of an inflationary spiral during the first half of 1985.

Delivery time on January shipments from vendors lengthened at the smallest rate in close to two years (since February 1983). The steady slowing on order deliveries is indicative of the general slowdown in the rate of economic expansion, as production rates catch up to demand of Arizona firms for raw materials and supplies.

Inventory levels of purchased materials remained almost unchanged in January, marking the seventh month of essentially no growth. The shutdown in inventory building, caused by the lower expansion rate and improved inventory control systems, has removed a major factor propelling the expansion. However, it is significant that no inventory overhang exists to move the economy into an inventory-induced downswing.

TABLE 2
ANTICIPATED EXPENDITURES FOR NEW PLANT AND EQUIPMENT

	Percent		
	Higher	*Same*	*Lower*
1985 compared to 1984	53	28	19
1984 compared to 1983	53	31	16
1983 compared to 1982	27	26	47
1982 compared to 1981	40	19	41
1981 compared to 1980	49	27	24
1980 compared to 1979	54	29	17
1979 compared to 1978	55	28	17
1978 compared to 1977	54	30	16
1977 compared to 1976	48	37	15
1976 compared to 1975	41	28	31

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

New orders received by Arizona firms from their customers went up in January, reversing a downtrend in the new order rate that was evident during the last half of 1984. While the increase was well under that recorded in each of the first nine months of 1984, it shows that the Arizona economy is now in a position to begin a more pronounced expansionary trend, after a growth pause during the last quarter of the old year.

Production enjoyed the largest increase in the past six months (since July), reversing several months of slow growth. While this is an encouraging sign, a continuation of such production increases is dependent on further growth in new order receipts.

Employment went up in January, following two flat months. While the net increase was small, the ability of the economy to reverse the slowing growth trend and the need to expand the work force again is a positive sign.

Purchases of materials and supplies by Arizona firms increased at the highest monthly rate since October. If the new order and production rates continue to expand over the next few months, even greater purchase commitments will be needed, which will move the economy to new, higher levels early in 1985.

— **Harold Fearon**

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

Phoenix Area Homes Appreciate 3 Percent in '84

Appreciation in home values during 1984 in the Phoenix metropolitan area remained stable at an annual rate of slightly more than 3 percent. An update and expansion of the original article on housing appreciation (see the third quarter, 1984, *Arizona Business*) follows.

HOUSING APPRECIATION, 1981-84

The median rate of housing appreciation in the Phoenix area has been nearly constant since late 1982, at 0.8 percent per quarter (see Figure I). This rate is lower than in previous years: As the nation remained mired in the 1981-82 recession, the rate of appreciation followed the inflation rate down to relatively low levels. Despite booming economic conditions during 1983 and 1984, the rate of appreciation has not accelerated; the slowest quarterly rate, 0.7 percent, was recorded for the fourth quarter, 1984.

Home values are again increasing at approximately the rate of inflation, as seen in Table 1, following several years during the 1970s when gains exceeded the inflation rate. The appreciation rate was lower than the inflation rate during 1984, partially because it typically lags changes in the inflation rate and partially because of persistent housing affordability problems. Continued high mortgage interest rates limit market demand and prevent sellers from raising the price of their home.

The appreciation rate during the last two years was less than the rate of increase in the median sales price, with the difference almost entirely due to an increase in size of the average home sold: The gain in the median sales price per square foot of resale homes was almost identical to the appreciation rate of resale homes (see Table 1).

Effect of Housing Characteristics on Appreciation

Not all homes appreciate at the same rate. A home's value is partially controlled by the owner, through maintenance, repair and improvement activities. Certain determinants of appreciation, however, are a function of the entire market, not controllable by the homeowner, such as whether the home is new and expensive.

The most important single influence on appreciation is whether the home was purchased new. (In this study, a "new" home is defined as one built, and later resold, between 1981 and 1984). As seen in Table 1, the appreciation rate of new homes, 10.7 percent during 1983-84, was nearly twice that of homes that were not purchased new, 5.7 percent. This rapid appreciation is realized only upon the first sale of a new home.

TABLE 1
INFLATION MEASURES

	Percent Change		
	1983	*1984*	*1983-84 Total**
Metropolitan Phoenix Consumer Price Index	1.6	5.8	7.4
U.S. Consumer Price Index	3.2	4.3	7.6
Phoenix Area			
All single family homes:			
Appreciation rate	3.6	3.2	6.9
Median sales price	4.8	6.3	11.5
New single family homes:			
Appreciation rate	5.7	4.7	10.7
Median sales price	6.0	9.9	16.4
Existing single family homes:			
Appreciation rate	2.9	2.7	5.7
Median sales price	4.6	4.8	9.6
Median sales price per square foot	2.9	3.0	6.0

*Calculated at a compounded rate

Source: Bureau of Business and Economic Research, College of Business, Arizona State University. U.S. Consumer Price Index from the U.S. Department of Labor, Bureau of Labor Statistics.

The faster increase in value of new homes may be misleading, however, in that at least a portion of the gain reflects additional expenses that most buyers of new homes incur in making permanent improvements, such as landscaping, which add to the value of the property. Thus, when a new home buyer later sells the property, not as much profit is realized as the appreciation rate suggests.

The other characteristic that has a statistically significant impact on appreciation is the price of the residence: The more expensive a home, whether a new or existing property, the higher its rate of appreciation (see Figure II). Homes that sold for more than $100,000 had an appreciation rate of 1.2 percent per quarter, compared to a rate of only 0.5 percent per quarter for homes marketed for less than $60,000.

Housing Appreciation by Geographic Area

While the rate of appreciation varies by location across the Phoenix metropolitan area, much of the variation can be explained by the housing characteristics described above. An area with a large proportion of new and expensive homes will usually have a higher rate of housing appreciation than an area of older and less expensive dwellings.

The rate of appreciation by district is shown in Table 2. Those districts with an appreciation rate that is statistically significant in its divergence from the metropolitan Phoenix average are indicated by an 'H' (higher) or 'L' (lower).[1] Rapid appreciation in the North Scottsdale, Paradise Valley, South Mesa, East Mesa, and Sun City West districts primarily relates to the greater proportion of new homes in these areas. In addition, most residences in North Scottsdale,

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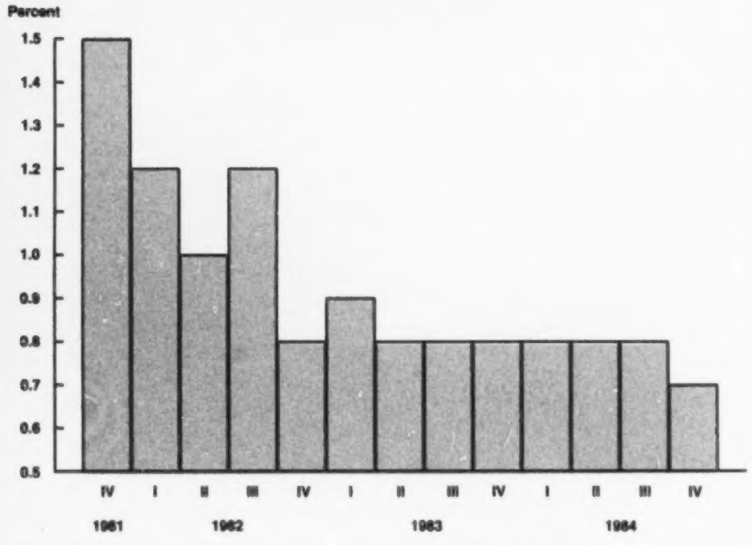
[1] The mean (average) quarterly appreciation rate in the Phoenix area during 1981-84, 0.9 percent, was slightly higher than the median rate, 0.8 percent, because of a relatively small number of properties that had a very high rate of appreciation. The median rate, therefore, is considered more representative of the total single family home market. The evaluation of statistical significance was performed upon the mean, since a median cannot be used for such mathematical processes.

Paradise Valley, and Sun City West are relatively expensive.

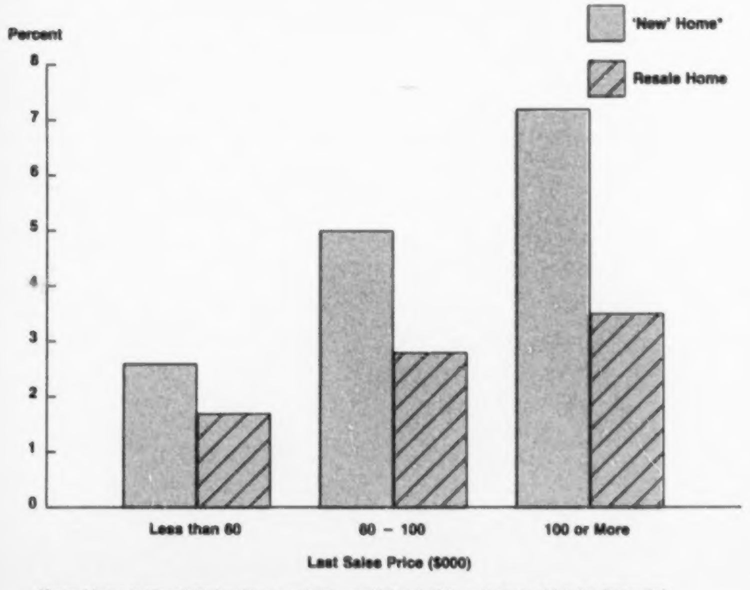
The other district with significantly higher appreciation, Sun City/Youngtown/Peoria, does not have a high proportion of new or expensive homes. Apparently, the unique nature of Sun City, including the unwillingness of homebuyers to consider other areas, such as Glendale or Phoenix, is responsible for the greater increase in home values. This same condition probably explains the very high rate of appreciation in Sun City West. East Mesa, which includes Leisure World and other retirement communities, also follows this pattern, since the appreciation rate in this district is slightly higher than expected, given its relatively low-priced homes.

FIGURE I
MEDIAN RATE OF APPRECIATION PER QUARTER
By Quarter Of Last Sale



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE II
APPRECIATION IN HOME VALUES
1981-84, Annual Rate



*A 'new' home is one originally sold as new between 1981 and 1984 and later resold during this period.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

The pattern of housing appreciation in North Scottsdale is unusual. The median rate was not particularly high at 0.9 percent and was less than expected given the preponderance of new, expensive homes in this area. However, the mean rate of appreciation, 1.2 percent, was significantly higher than the metropolitan average, 0.9 percent. North Scottsdale had a large number of homes gaining value rapidly but another large segment that was not appreciating at all. Surprisingly, the expensive homes (those priced more than $100,000) were not appreciating, while the intermediately priced residences (those priced between $60,000 and $100,000) gained value. Since price is a function of supply and demand, apparently an excessive supply of expensive homes in North Scottsdale is responsible for their slow rate of appreciation.

The slowest appreciation rates in the Phoenix area were in the Metrocenter, Maryvale, and South Tempe districts. Metrocenter and Maryvale are areas in which most homes are lower-priced and older. South Tempe's low home appreciation rate occurred in all price ranges and for both new and resale properties.

The appreciation rate in some districts was different in 1984 than in 1981-83. Except for Sun City West, each district that enjoyed a higher appreciation rate in 1984 was in Phoenix, generally in an area of older dwellings in the central part of the city. None of the districts with a lower appreciation rate during 1984 were in Phoenix: North Tempe, North Mesa, and the western suburbs suffered the largest decline. Because of the short time frame and the associated relatively small number of transactions, these changes in appreciation during 1984 should be interpreted with caution.

TABLE 2
MEDIAN RATE OF HOME APPRECIATION PER QUARTER
By Geographic District

District	Median Percent Change Per Quarter *1981-83*	*1984 Only*	*1981-84*
North Scottsdale	0.9	0.9	0.9[H]
South Scottsdale	0.7	0.7	0.7
Paradise Valley	1.3	1.0	1.2[H]
North Sunnyslope/Moon Valley	0.7	0.7	0.7
Northwest Phoenix	0.9	0.8	0.8
Metrocenter	0.4	0.6	0.5[L]
Sun City/Youngtown/Peoria	1.2	1.3	1.2[H]
Glendale	0.8	0.7	0.7
Christown	0.5	0.5	0.5
North Central Phoenix	0.6	1.0	0.8
East Camelback	0.6	1.0	0.9
East Central Phoenix	0.6	1.1	0.9
Mid-town Phoenix	0.5	0.8	0.6
West Central Phoenix	0.7	0.7	0.7
Maryvale	0.5	0.5	0.5[L]
Downtown/South Central Phoenix	0.0	1.0	0.6
South Phoenix	0.8	1.1	1.0
North Tempe	0.7	0.2	0.5
South Tempe	0.7	0.5	0.6[L]
North Mesa	1.0	0.5	0.8
South Mesa	0.9	1.0	1.0[H]
East Mesa	1.2	0.9	1.0[H]
Chandler/Gilbert	0.9	0.9	0.9
Western Suburbs	1.2	0.6	0.9
Deer Valley	1.0	0.7	0.8
Sun City West/Rural Maricopa Co.	1.6	2.2	2.1[H]
TOTAL, METROPOLITAN PHOENIX	0.8	0.8	0.8

[H] The mean associated with this median is significantly higher than the mean for all of metropolitan Phoenix.

[L] The mean associated with this median is significantly lower than the mean for all of metropolitan Phoenix.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University. District designations are copyrighted by the Maricopa County Housing Study Committee.

OUTLOOK

Appreciation in Phoenix area home values is expected to remain at slightly more than a 3 percent annual rate through 1985. Inflation and housing affordability, the two factors that most influence the overall appreciation rate, are not likely to change much through 1985. Because the inflation rate is relatively low, and the price of other homes is not rising rapidly, a seller does not need to make a large profit on the sale of a home. Further, the affordability problem, currently caused primarily by high mortgage rates, prevents the seller from increasing the price greatly.

Looking beyond 1985, appreciation rates are likely to follow changes in the inflation rate. Because it is difficult to present a situation in which mortgage rates would decline substantially, a persistent affordability problem is likely to continue to limit housing appreciation. Should mortgage rates fall, any increase in home values that significantly exceeds the gain in household income will again cause an affordability problem, this time due to higher home prices rather than to high interest rates. Thus, it is difficult to conceive a situation similar to that of the late 1970s, when housing values accelerated rapidly, beyond rises in inflation or income levels.

— **Tom R. Rex**
Research Manager

— **Jay Q. Butler**

Dr. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as Director of the Arizona Real Estate Institute.

Valley Home Sales Rise in '84

The number of homes sold in the Phoenix metropolitan area during the fourth quarter declined slightly from the third quarter level of 13,850 to approximately 13,500 (see Table 1 on page 11). While sales of existing homes fell for the second consecutive quarter, new home sales rose during the fourth quarter.

For the entire year, home sales numbered 55,658, nearly 10 percent more than in 1983. Within the single family home market, the increase was led by sales of resale properties, but within the townhouse/condominium market, sales of new properties gained the most.

Sales of existing single family homes accounted for two-thirds of all home sales during 1984; together with sales of existing townhouses and condominiums, the resale market made up more than three-fourths of all sales. Sales of new townhomes and condominiums increased most rapidly during 1984 but still constituted only 6 percent of all sales.

MEDIAN SALES PRICE

The median sales price fell in the fourth quarter as both new and resale single family home prices declined. The median sales price of townhouses and condominiums increased, however.

The median sales price of all homes sold during 1984 was 6.0 percent higher than in 1983. Part of this increase was due to a shift toward the purchase of larger homes: The median price per square foot did not rise by as much as the median sales price in 1984. The price increase for new homes was nearly twice the gain for existing homes. While the median price of new townhouses and condominiums rose 21 percent during 1984, it still did not reach its 1981 peak.

OUTLOOK

With little change anticipated in inflation rates, interest rates, or general economic conditions, Phoenix area home sales are expected to be much the same in 1985 as in 1984. Prices probably will continue to rise at a moderate rate, with an annual sales volume near that of 1984.

— **Tom R. Rex,**
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
Fourth Quarter, 1984	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	Total
Median sales price	$72,225	$78,700	$74,750	$63,900	$64,825	$64,450	$72,025
Percent change from:							
Third quarter, 1984	−1.1	−0.7	−0.3	1.4	2.8	2.3	−1.0
Fourth quarter, 1983	3.8	5.7	5.3	2.2	13.3	7.4	3.8
Number of sales	8,802	2,548	11,350	1,217	914	2,131	13,481
Percent change from:							
Third quarter, 1984	−6.1	6.3	−3.5	−1.2	6.2	1.8	−2.7
Fourth quarter, 1983	8.0	−5.1	4.6	11.5	36.8	21.1	7.0
Annual, 1984							
Median sales price	$71,250	$76,950	$73,000	$63,500	$62,600	$63,100	$71,025
Percent change from 1983	4.8	9.9	6.3	3.3	21.2	8.8	6.0
Number of sales	37,183	10,037	47,220	5,173	3,265	8,438	55,658
Percent change from 1983	10.5	5.0	9.3	2.3	28.5	11.0	9.6

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Nearly 19,000 Arizona Service Businesses Make $5.6 Billion in '82

At the end of 1982, the services industry in Arizona comprised 17,262 establishments that were subject to federal income tax and an additional 1,591 establishments exempt from this tax, according to the Census of Service Industries conducted by the U.S. Bureau of the Census.

The portion of the industry subject to federal tax reported receipts of $5.1 billion in 1982, an average of $294,000 per establishment, compared to a revenue of $0.5 billion for tax-exempt organizations, an average of $338,000 per establishment.

TYPES OF SERVICE BUSINESS

The services industry consists of several types of business, including health services, except hospitals; business services; hotels, motels, and other lodging places; personal services; amusement and recreation services; legal services; and selected educational services. Other businesses that fall into this category are engineering, architectural, and surveying services; accounting, auditing, and bookkeeping services; social and other services; automotive repair, services, and garages; and miscellaneous repair services.

Organizations exempt from the federal income tax include civic, social, and fraternal organizations; individual and family social services; and various other non-profit operations, such as museums, nursing care facilities, and legal aid societies.

EMPLOYMENT

Taxable organizations employed 147,768 workers in March 1982, an average of nine employees per establishment, compared to employment of 21,551 workers in tax-exempt organizations, an average of 14 employees per establishment. The average pay per worker was higher in taxable organizations ($12,700) than in tax-exempt organizations ($9,600).

RECEIPTS AND PAY, BY SECTOR

Of the establishments subject to federal income tax, those engaged in health services constituted 27 percent of the total and produced 26 percent of the receipts. The next largest sector was business services, with 18 percent of the establishments and 22 percent of the receipts.

Although the lodging industry made up only 4 percent of the establishments, it produced 11 percent of the receipts and employed 15 percent of the workers. This sector generated the greatest receipts per establishment, $764,000, but the average pay of its workers (which includes part-time employees) was the least, $6,800.

The smallest service establishments were those dealing with personal services, producing receipts of only $137,000 per establishment.

The highest paid service workers were those in the legal services sector, with an average pay of $25,000 in 1982. Health services employees earned an average of $20,200.

GEOGRAPHIC DISTRIBUTION AND RECEIPTS

Nearly two-thirds of the state's service establishments were located in Maricopa County, with an additional 20 percent found in Pima County.

Services industry establishments in the Phoenix metropolitan area that were subject to the federal income tax had 1982 receipts of $3.6 billion, 71 percent of Arizona's total, and numbered 11,011, which was 64 percent of the state's total. The city of Phoenix had 6,589 service establishments, many more than Scottsdale (1,138), Mesa (987), Tempe (804), and Glendale (476). Scottsdale and Tempe had an unusually large number of business services establishments, while Mesa had a large number of health services establishments.

Phoenix service establishments ranked first in value of receipts, at $2.5 billion, 68 percent of the county's total. Establishments in Scottsdale were a distant second, with receipts of $0.4 billion. On a per capita basis, however, establishments in Goodyear and Scottsdale had the greatest value of receipts, followed by those in Phoenix.

Outside Maricopa County, communities with a large number of service establishments included Tucson (2,842), Yuma (351), and Flagstaff (332). The value of receipts in Tucson was $0.8 billion.

— **Tom R. Rex**
Research Manager

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sion of mining and agriculture reveals that the rest of the Arizona economy contracted during the first two quarters of 1980, followed by a recovery in the third quarter.

For the 1981-82 recession, the adjusted GSP attests to most of the Arizona economy experiencing a longer, but milder, recession than indicated by the unadjusted GSP. The difference was due to continued rapid expansion through all of 1981 in both the mining and agriculture industries, followed by a severe contraction in 1982 in both industries.

GSP/GNP COMPARISON

More recently, the adjusted GSP suggests that most of the Arizona economy is closely following the national economic cycle on a quarter-by-quarter basis. After a peak growth rate in the first quarter of 1984, both economies slowed during the second and third quarters. However, while the slowdown in the national economy dropped the rate of growth to less than its long-term trend of 3 percent, the greater part of the Arizona economy continued to grow faster (6.1 percent) than its long-term trend of 5.5 percent.

Growth in the national economy accelerated during the fourth quarter to an estimated 3.9 percent. The adjusted GSP probably also grew at an accelerated rate, perhaps 7 or 8 percent. Because of the unpredictability of growth in the gross products of agriculture and mining, growth in total GSP is difficult to estimate. However, there is no doubt that the 1984 average will greatly exceed the 1978 record of 10.7 percent.

— Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month	*Value*	*Percent Change from Previous Month*	*Percent Change from Year Ago*	*Value*	*Year-To-Date Percent Change from Year Ago*
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Nov.	272,672	−11	23	3,553,340	63
Pima County	Nov.	55,643	−21	28	709,512	21
Balance of State	Nov.	95,493	96	154	631,997	33
Arizona	Nov.	423,808	− 1	40	4,894,849	51
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Nov.	3,048	−41	−13	56,686	34
Pima County	Nov.	702	−47	−36	14,464	2
Balance of State	Nov.	1,032	5	17	12,400	6
Arizona	Nov.	4,782	−36	−13	83,550	23
HOME SALES						
Maricopa County - Number	Dec.	4,854	32.3	21.3	55,658	9.5
Maricopa County - Median Price	Dec.	72,700	1.7	4.0	71,025	6.0
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Nov.	2,353.8	9.7	3.8	30,620.1	8.4
Arizona	Dec.	2,687.6	14.2	9.7	33,307.7	8.5

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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